PROGRESSIVISM, AGRICULTURE AND CONSERVATION IN THE CAPE COLONY CIRCA 1902 - 1908

Karen Brown
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This thesis looks at concepts of progress and agricultural development in the Cape Colony in the aftermath of the South African War (1899-1902). The first decade of the twentieth century was one of economic crisis. War was followed by a severe depression exacerbated by a slump in the diamond industry, which prompted doubts about the longevity of the country's mineral resources. It was also a period of recurrent drought which aroused concerns about food security and criticisms about the Colony's reliance on imported victuals and primary products such as timber. In this context, self-professed 'progressive' politicians and commercial farmers looked to the land as the most viable source of national wealth. Politically this period was dominated by Leander Starr Jameson's Progressive Party, which held office from February 1904 until February 1908. The thesis analyses how this Party, usually associated with mining capital and Rhodes's legacy, deliberately promoted itself as the progenitor of agricultural progressivism in terms of its rhetoric and the policies it pursued. Agricultural amelioration was linked to conservation. Scientific methods and systematic land management strategies were advocated to protect and enhance scarce water resources, soil fertility and pastures on which the rural economy depended. The state positioned itself as the provider of scientific expertise and introduced legislation to promote and regulate the agricultural economy and environment. The Cape was influenced in part by conservationist developments, which occurred contemporaneously in Australia and, in particular, in the United States. Historians of American history have identified the early twentieth century there as the 'Progressive Era'. This thesis explores the scientific links that emerged between the governments of these two countries and argues that the Cape too self-consciously promoted itself as a progressive state with agricultural development and conservation constructed as two of the principal pillars of progress.

ABSTRACT

Progressivism, Agriculture And Conservation In The Cape Colony Circa 1902-1908

The first decade of the twentieth century was a time of transition in the history of South Africa. The British annexation of the South African Republic and the Orange Free State, formalised by the Treaty of Vereeniging in May 1902, was followed, eight years later, by the political Union of South Africa. The historiography of post bellum reconstruction has focused primarily on political, economic and social changes orchestrated by Alfred Milner in the former Afrikaner Republics. The Cape, meanwhile, with its established responsible government, its commercial networks based on diamond and fibre production and its financial debilitation in the wake of a prolonged economic slump extending from 1904 until Union, has featured as little more than a footnote in the historical narrative. This thesis aims to address this historiographical dearth and contends that the Cape, as in the case of its northern neighbours, underwent a series of administrative reforms and rural innovations in the aftermath of the South African War (1899-1902). In particular, it discusses the nature of progressivism as enacted in the Cape Colony and looks at the efforts made by official scientists, modernising farmers and politicians of all backgrounds to transform their ideals into political reality.

Apart from augmenting the literature on South African reconstruction, this thesis also contributes to the existing studies of political and social ideologies, as well as the growing field of environmental history in the region. Progressivism as a concept has failed to attract much attention from historians when compared with the analyses of nineteenth century 'Cape Liberalism'. Environmental

history, meanwhile, has often dealt with longer times spells than the subject of this thesis, and thus has not addressed the very specific rural issues of the post bellum Cape, which this work is able to tackle in depth. This thesis is distinctive because unlike many approaches to agrarian history, it deals with the cultural, as well as the political and economic forces of change. A reflection on the rhetoric of progress, just as much as its practice, constitutes a major part of this work.

Progressivism was an important political and cultural feature of the Cape at the turn of the nineteenth and the twentieth centuries. Like liberalism, notions of development and improvement on the part of both individuals and the state underwrote its ideology. Materialism, science, together with a desire to make existing economic, administrative and social structures operate more effectively, characterised its philosophical mantra. This thesis compares notions of progress in the Cape with concurrent events in the United States. There the presidency of Theodore Roosevelt (1901-1909) has attracted the historical epithet, the 'Progressive Era'. Under Roosevelt, an ideological agenda of 'national efficiency', manifested itself, in part, through the expansion of specialised bureaucracies and the conservation of the country's natural resources. This thesis argues that these activities in America were not unique and that the Cape too experienced a contemporaneous 'Progressive Era'. Although the term 'national efficiency' was not specifically used in the Colony, this rationale, nevertheless, underpinned many of the policies and reforms that characterised Cape reconstruction.

During the first decade of the twentieth century, the Cape was politically dominated by Leander Starr Jameson's Progressive Party, which held office from February 1904 until February 1908. The thesis explores how this Party, usually associated with mining capital and

Cecil Rhodes's legacy, deliberately promoted itself as the progenitor of agricultural progressivism in terms of its ideology and the policies it pursued. Jameson's government was committed to attaining agricultural self-sufficiency and, in the wake of a slump in the diamond trade, it sought to increase its export revenues from rural production. Achieving these objectives inspired an interventionist approach. An unprecedented plethora of enquiries was instituted to discover how the agricultural economy could be improved. The thesis explores the efforts of the Progressive Government to reform aspects of the Departments of Agriculture and Public Works in the hope of making these institutions function more effectively. Scientific methods and systematic land management programmes were advocated to protect and enhance scarce timber and water supplies, and protect fragile soils and pastures. As in the United States, conservation was very much associated with efficient land use. Hydraulic surveys were implemented and legislation was introduced to facilitate the development of irrigation projects. The management of silvatic resources was centralised and reorganised to promote long-term sustainability of yields. For a mixture of sentimental and utilitarian reasons, wildlife featured as a topic of the conservationist debate and the first game reserves in the Colony were proclaimed, providing new definitions of official land use. The state also positioned itself as the provider of scientific expertise and introduced legislation to promote and regulate the agricultural economy. Under the Progressive Government the range of scientific experts attached to the civil service was increased, and the arable sector received more official attention that before. Experiments were carried out to improve seeds, crops and fertilisers. Entomologists played a vital role in the battle against insects and parasites, which threatened the profitability of crops and livestock. The powers of the state were increased by the introduction of new regulations to deal with injurious arthropods and to check the purity of produce and seeds. The Progressives were concurrently

committed to finding new ways of improving the production and marketing of agricultural goods by subsidising and trying to encourage farmers to form co-operatives to augment profits and to help revive floundering industries, such as that of viticulture.

The nature, the provenance and the extent of public support for these policies are vital for any understanding of Cape progressivism. The thesis addresses some of these issues and suggests that politicians of both the Progressive Party and John Xavier Merriman's South African Party promoted an agenda of agricultural amelioration. A shared commitment to rural development was regarded as a means of assuaging ethnic tensions between Afrikaner and anglophone settlers that had been a legacy of the South African War and the growth of Afrikaner nationalism. This study also reveals how there was no monolithic notion as to what constituted progress. The complexity of the cultural and ideological positions entertained by individuals with regard to concepts of development, the value of science, the response to official regulations, and the differing perceptions about the aesthetic and economic value of the natural world are all discussed. Nonetheless, despite some differences in approach, what united the progressive elements of the agricultural community was the assumption that the Colony needed to modernise and to adopt more efficient methods of production if it were to become not only self-sufficient in all its foodstuffs, but also able to profit from a stable export market. Characteristically, progressive farmers constituted a small, but vociferous rural minority, educated and articulate, with sufficient financial resources to be able to invest in the land. The activities of individual agriculturists such as Thomas Smartt, Walter Rubidge, William Southey and Charles George Lee are used to illustrate both the rhetoric and practice of early twentieth century rural progressivism. The role various farmers' lobbies played in determining official policy is also revealed, and the extent to which

modernising groups could actually dictate the political agenda is analysed.

In the eastern Cape the debates of the Transkei Territories General Council, or Bunga, demonstrated that progressivism, as an ideology, was not the preserve of the white ruling élite. Despite the problems facing African producers in respect of access to land and telluric resources, some were able to prosper during this period and described their agricultural experiences before various select committees. In the Bunga itself, some members of this educated élite demonstrated a shared progressive agenda, through their commitment to the development of forest plantations, their concerns about erosion and the propagation of stock diseases, and their establishment of agricultural institutions at Tsolo and Teko, which provided a more extensive rural education than that currently available for settler farmers. Science as a prerequisite for rural development was appreciated as much by the progressives in the Transkei as it was in Cape Town.

The contribution made by science and its practitioners to the development of the rural economy forms an important element of this thesis. Vibrant intellectual, as well as botanical and entomological exchange networks, emerged between the Cape and other anglophone settler states, especially the United States and Australia. Science was an important mechanism by which these countries sought to promote themselves as modern, civilised nations, intellectually equal to their metropolitan contemporaries. The Colony was also influenced by events in India, in particular, in terms of hydraulic and silvicultural developments, which were, to some extent, replicated in the Cape, primarily through the transfer of personnel from the Asian sub-continent to South Africa. Nonetheless, despite the supposed universality of western science, this thesis also illustrates the fact that

in the Cape Colony its nature was contested. Official scientists, recruited from abroad, at times faced strong ideological opposition from local farmers who believed in the superiority of their own knowledge based on observation and experience.

Science and the implementation of measures, designated by some as progressive, could also be disputed because the potential benefits were not open to all. Progressivism was multi ethnic in provenance, but it was not multi class. Poorer farmers often lacked a practical rationale for investing in new approaches to scientific agriculture. Hampered by inadequate access to credit, to extensive markets, or even to good pasturage, the costs incurred in adopting even the most rudimentary of modern farming practices, such as small stock dipping or weed clearance, could far exceed the financial benefits that could accrue to them as a result of these efforts. In fact, progressivism, as an ideology and a set of enactments could pose a major threat to smaller producers. This was particularly apparent in relation to the enforcement of silvatic regulations. In the Knysna and Tsitsikamma Forests, for example, the growing power of commercial companies and their working relationship with the Forestry Department, deprived many independent white and coloured woodcutters of a viable livelihood. In the Eastern Cape and the Transkei, meanwhile, the commodification and official management of what once constituted communal forests emerged as an important element in the history of African dispossession. It revealed that it was not only the land to which blacks were increasingly denied access, but also to silvatic and faunistic resources.

* *

The thesis begins with a historiographical overview, providing a general introduction to the literature on reconstruction and highlights some of the key secondary texts dealing with environmental history

that are relevant for this period. It also provides some background information on the political situation in the Cape and emphasises the fact that the approach is distinctive because the decade of reconstruction, as played out in this colony, has been largely overlooked in the historical narrative. The first chapter, entitled the 'agricultural dilemma' builds on the introduction and looks at the links between progressive farmers and their political representatives. A detailed overview of the problems facing Cape agriculture, as perceived by agriculturists, politicians and scientific experts, demonstrates how contemporaries identified a number of climatic, structural, economic and cultural obstacles to development. On the basis of these understandings, progressive ideologues sought new ways of ameliorating output.

Chapters two and three deal with their efforts to improve agricultural yields. The second chapter focuses on the initiatives of Jameson's Government. In particular, it reveals how the state became involved in a wider variety of economic processes, as this ministry sought to encourage the formation of co-operatives and took direct action to promote an overseas fruit trade. In its commitment to bringing about administrative efficiency, important reforms were introduced to the Agriculture Department. Nonetheless, development required more than just better management and trade negotiations; it was also contingent upon advances in science. This chapter explores the intellectual milieu in which official experts operated and focuses in particular on the efforts of veterinarians, the agricultural assistant and the marine biologist to improve pastoral, arable and piscine yields. The efforts of the Bunga in the Transkei to further agricultural education as a prerequisite for enhancing production, is also discussed.

Chapter three expands on the issue of science and concentrates on the work of the Colony's first official entomologist, Charles Lounsbury. Entomology has been selected for special coverage because agricultural output was subject to depredations by a wide variety of injurious insects; a fact that has scarcely been acknowledged in the environmental historiography. Fruit pests, locusts and ticks all undermined the rural economy. The chapter illustrates the importance of international networks as a source of ideas and the basis for scientific credibility. Entomological discoveries, such as adapting insecticides to the Cape environment or developing methods of controlling ticks were succeeded by statutory regulations, demonstrating the growing contribution of science to the inception of state policy. The extent to which official experts could determine government agendas on their own account, and the contribution Lounsbury made to international entomological science are also explored.

The last three chapters deal with conservation issues. Chapter four looks at the question of veld degradation and land reclamation, principally through water conservation. Thomas Smartt, as Commissioner of Public Works, was a keen advocate of irrigation, as demonstrated not only in the activities of the Smartt Syndicate in the Northern Cape, but also in his creation of a specific governmental department and his commitment to modifying existing legislation to make it easier for farmers to obtain legal and financial support for their hydraulic endeavours. This chapter also identifies some of the strains that existed between amateur and professional scientists and demonstrates the problems the Progressive Government faced in trying to promote a collective approach to the construction of viable irrigation works. Silviculture, on the other hand, as chapter five reveals, was very much a state sponsored enterprise. The nationalisation of the principal forests was concluded during the first decade of the

twentieth century and plantation afforestation was intensified to try to render the Colony self-supporting in timber supplies. The chapter highlights the highly intrusive nature of silvatic regulations and examines the repercussions of this technocratic encounter on a variety of communities who traditionally lived and worked in the woodlands.

The final chapter, dealing with wildlife and vermin, emphasises the fact that conservation in the Cape was not just about protecting scarce water and timber supplies, but also included a concern about the survival of the region's megafauna. A mixture of ethical, scientific, aesthetic, economic and recreational motives underpinned this agenda. The founding of two wildlife reserves went hand in hand with the consolidation of existing game laws, which theoretically excluded not only Africans, but also poor whites, from the hunt. Who had, and who had not, access to wildlife was an important political issue, whilst the sentimental, and at times controversial, belief in the value of selected species indicated that progressivism was not just about efficient government and economic yields, but also contained a cultural element. The conclusion draws together ideas from this and the preceding chapters in an attempt to identify the nature of Cape progressivism in the early twentieth century.

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ABBREVIATIONS USED IN THIS THESIS

AGR	-	Agriculture Department (Archive Papers)
AJCGH	-	*Agricultural Journal of the Cape of Good Hope*
CA	-	Cape Archives
CAW	-	*Cape Argus Weekly*
CH	-	*Cape Hansard*
CPP	-	Cape Parliamentary Papers
CT	-	*Cape Times*
CTW	-	*Cape Times Weekly*
ENC	-	Entomological Department (Archive papers)
EPH	-	*Eastern Province Herald*
FCE	-	Eastern Conservancy (Archive Papers)
FCM	-	Midlands Conservancy (Archive Papers)
FCT	-	Transkei Conservancy (Archive Papers)
FCW	-	Western Conservancy (Archive Papers)
JAH	-	*Journal of African History*
JEE	-	*Journal of Economic Entomology*
JESSA	-	*Journal of the Entomological Society of South Africa*
JSAFA	-	Journal of the South African Forestry Association
JSAS	-	*Journal of Southern African Studies*
MLA	-	Member of the Legislative Assembly
MLC	-	Member of the Legislative Council
MNKF	-	*Midland News and Karroo Farmer*
NA	-	Native Affairs (Department) (Archive Papers)
PMO	-	Prime Ministers Office (Archive Papers)
SAHJ	-	*South African Historical Journal*
SAJEH	-	*South African Journal of Economic History*
SAL	-	South African Library (Cape Town)
SANW	-	South African News Weekly
SANAC	-	South African Native Affairs Commission
SRCGH	-	*Statistical Register of the Cape of Good Hope*
TTGC	-	Transkei Territories General Council

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INTRODUCTION

(i) Background: Cape Politics and an Introduction to the Ideology of Progressivism

> Our desire if our ministry is to have any special feature, our desire is to make agriculture and the proper development of the agricultural resources of this Country the main feature of this Ministry which has just come into office.[1]

Thus declaimed the Prime Minister, Leander Starr Jameson, to his Cape Town audience after the accession of the Progressive Party to government on 22nd February 1904. Jameson, a close associate of Cecil Rhodes, infamous for the Raid on Transvaal (1895-96), and his chaotic and despotic rule in Mashonaland and Matabeleland (1890-1895), had become the elected head of the Cape Colony at a critical time in the history of South Africa. For South Africa had recently emerged from two and a half years of protracted warfare, which had witnessed the death of over 70,000 people, the slaughter of hundreds of thousands of livestock and the destruction of huge swathes of farmland by marauding armies and scorched earth tactics. The South African War (1899-1902) caused considerable agricultural dislocation throughout much of the region, including the northern and eastern parts of the Cape, which were sporadically invaded by Republican commandos. The peace treaty, concluded at Vereeniging on 31st May 1902, tolled the death knell for Afrikaner aspirations for independence from British rule, as the South African Republic (Transvaal) and the Orange Free State (Orange River Colony) formally fell under imperial jurisdiction. Nonetheless, eight years later the former Republics,

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[1] 'Banquet to the Prime Minister', *Cape Times* (hereafter *CT*), 2 March 1904.

together with the Cape Colony and Natal formed the Union of South Africa, led by an Afrikaner Prime Minister from the Transvaal, Louis Botha. The first decade of the twentieth century was therefore a pivotal period of transition in the history of South Africa. In the Cape, the era was politically dominated by the Progressive Party, which held office from February 1904 until February 1908.

Against this historical background, the purpose of this thesis is to look specifically at rural progressivism as evinced in the Cape Colony in the aftermath of war. It aims to contribute to the historiography of South African reconstruction, as well as the growing body of literature on agricultural and environmental history pertaining to this region. In particular, the thesis focuses on the rhetoric and practice of progress as articulated by farmers, politicians and government scientists. Unlike many other approaches to agrarian history, the study is unusual in that it deals with the cultural, as well as some of the political and economic forces of change. It also considers the role played by the Progressive Government in furthering agricultural development. As a corollary, the study explores the evolution of the bureaucratic and scientific structures that had emerged in the Colony after the introduction of responsible government in December 1872. Science was closely tied to the priorities of capitalist agriculture, as well as fishing and forestry, which had resulted from the Cape's interaction with the global economy and the drive to ameliorate yields.

Contemporaneously, the first decade of the twentieth century witnessed the growing importance of conservation as a method of harnessing resources and regulating their exploitation for the market. Conservationist ideas, it will be argued, also had the function of precipitating telluric transformation. The thesis reflects on the development of international networks of scientific and botanic exchange and argues, that the Cape, just like the United States, self-

consciously promoted itself as a modernising and progressive country through its willingness to adopt scientific initiatives and a more conservationist ethos. This analysis also provides some insights into the complexity of the cultural and ideological positions entertained by Africans, Afrikaners and anglophone settlers with regard to such major issues as the concept of progress, the value of science, the response to official regulations, and the differing perceptions about the aesthetic and economic value of the natural world.

Progressivism was not an ideology enshrined in a written philosophical doctrine. As a consequence, opinions as to what constituted progressive development, and how it should be enacted, varied immensely. As the succeeding chapters will illustrate there was no monolithic overarching agenda to which all self-proclaimed progressive farmers and politicians could adhere. This complexity resonated with situations elsewhere, where similar concepts of modernity were expounded through a wide range of beliefs and policies.

Historiographically, these ideas have been most clearly discussed in relation to the United States, for which there already exists an extensive literature.[2] Historians have associated the American 'Progressive Era' with the presidency of Theodore Roosevelt (1901-1909). In the United States the rhetoric of progress focused sharply on ideas of 'national efficiency' which were debated at both federal and state levels. Progressivism had no tightly defined ideology,

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[2] See for example, G.E. Mowry, *Theodore Roosevelt and the Progressive Movement* (University of Wisconsin Press, 1946) and *The Era of Theodore Roosevelt and the Rebirth of Modern America 1900-1912* (New York, 1958); S. P. Hays, *The Response to Industrialisation 1885-1914* (Chicago, 1957) and *Conservation and the Gospel of Efficiency* (Harvard University Press, 1959); A. A. Ekirch, *Progressivism in America: A Study in the Era from Theodore Roosevelt to Woodrow Wilson* (New York, 1974); E. R. Richardson, *The Politics of Conservation: Crusades and Controversies 1897-1913* (University of California Press, 1962); S. Fox, *John Muir and His Legacy: The*

but was a movement and set of beliefs that transcended both Democrat and Republican Party lines. In the political arena progressives sought to make efficient use of, and conserve the country's resources, break the economic and political power of monopolistic trusts, promote the formation of a dispassionate bureaucracy based on professional expertise, as well as improving education and living conditions in the cities. American progressivism was also closely linked to a revised form of capitalism. In contrast to the nineteenth century mantra of laissez-faire and individual competition, private economic exploitation and profiteering were to be mitigated by a concept of the social good. Conservation was a similar set of ideas, based on the ideal of sustaining valuable resources for future generations. Science was regarded as an important tool of progress; advances in the nineteenth century had encouraged some to believe that through technology the opportunities for economic expansion and environmental transformation were almost limitless.

Progressive ideologues were essentially optimists who believed that it was possible to create a better world through a more collectivist, more regulated and more scientific approach to development. Such notions were reflected in the growing liaison between public and private sectors; for example, in the development of large hydraulic projects in the American West and the funding of experimental stations specifically designed to further agricultural science. These issues were important in the Cape context because events in the United States influenced the Colony and encouraged an ideological exchange between scientific practitioners, as well as politicians and farmers, in respect of entomology, silviculture, hydraulic engineering and legislation pertaining to commercial trusts and the setting up of colonial game parks (chapters 1, 3, 4,5 and 6).

American Conservation Movement (Boston, 1981); D. Worster, *Rivers of Empire: Water*

Importantly, the American historiography has created a point of reference against which to suggest that the Cape too underwent its own 'Progressive Era'. This analogy has not been expressly stated before in the historical literature.

At the same time, in Britain there was also a belief in 'national efficiency' and economic and social progress. Here the ideology was underwritten by concerns about the long-term durability of Empire in the face of aggressive foreign competition. Intellectual and political activists such as the Fabians and Co-efficients advocated improvements in housing, education, medical care and wages in order to create a fitter, healthier and more productive 'imperial race'. To some extent their ideas were acted upon by the Liberal Government in the years preceding the First World War, as the first tentative steps towards the creation of the welfare state were taken. Beyond the shores of the British Isles, 'national efficiency' was closely linked with Joseph Chamberlain's concept of 'constructive imperialism' during his time as Colonial Secretary (1895-1903). Chamberlain believed that the resources of the colonies should be effectively exploited and developed to create a self-supporting Empire, independent of British purse strings and economically bound together through a series of preferential trade tariffs.[3] On the imperial periphery, such an ideology was reflected in both the settler and crown colonies. In Australia, as in the Cape, where responsible government also prevailed, there were efforts to make the newly formed Confederation agriculturally self-

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Aridity and the Growth of the American West (Oxford, 1992).

[3] On British ideas about 'national efficiency' as well as a discussion of Chamberlain's tariff policies see B. Semmel, *Imperialism and Social Reform: English Social Imperial Thought 1895-1914* (London, 1960). A. Davin, 'Imperialism and Motherhood', *History Workshop Journal*, vol. 5, (1978), looks at links between social reform and attempts to create a productive workforce able to sustain Empire. Science and 'constructive imperialism' have featured in the theses of M. Worboys, 'Science and British Colonial Imperialism 1895-1940' (University of Sussex, Ph.D. thesis, 1979) and J. Clark, 'Science, Secularization and Social Change: The Metamorphosis of Entomology in Nineteenth Century England' (University of Oxford, D.Phil. thesis, 1994).

sufficient, through state sponsored irrigation schemes and the encouragement of scientific approaches to farming.[4] Elsewhere reformist administrators such as George Curzon (Indian Viceroy 1898-1905), together with Alfred Milner, in his capacity as governor of the Transvaal and Orange River Colony (1900-1905), pushed through organisational and agricultural transformations 'from above'.[5] Thus a concept of progress, as articulated and promoted within the Cape during the first decade of the twentieth century, can be located within a broader imperial context.

Much of the historiography on notions of progress and development in the Colony has focused on the origins and waning of 'Cape Liberalism' during the course of the nineteenth and early twentieth centuries. A variety of historiographical approaches have been adopted. Phyllis Lewsen has emphasised the anglophone nature of this movement, which was entertained by intellectuals and politicians such as John Xavier Merriman as well as Olive and William Schreiner.[6] Stanley Trapido has demonstrated how liberalism was rooted in an imperialist commitment to commercial production and the development of free markets. He has argued that prior to the discovery of minerals, the liberal agenda of the Cape state, which was backed by an influential mercantile anglophone élite, focused on the creation of an African peasantry. African peasants, he suggested, were intended to form a collaborationist rural class, satisfied with the apparent benefits of British rule and wealthy enough to participate in both the local and the global economy to the advantage of the

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[4] See, for example, J. Powell, *Environmental Management in Australia 1788-1914: Guardians, Improvers and Profit - An Introductory Survey* (Oxford, 1976); J. Todd, *Colonial Technology: Science and the Transfer of Knowledge to Australia* (Cambridge, 1995); I. Tyrell, *True Gardens of the Gods: Californian-Australian Environmental Policy 1860-1930* (University of California Press, 1999).

[5] R. Moore, 'Imperial India, 1858-1914', in A. Porter (ed). *The Oxford History of the British Empire: the Nineteenth Century* (Oxford, 1999). Milner is dealt with below.

[6] P. Lewsen, 'The Cape Liberal Tradition – Myth or Reality', *Race*, vol. 13,1 (1971).

commercial sector.[7] In this respect, Colin Bundy has identified the years 1850 to 1890 as decades that witnessed the 'rise' of a progressive black peasantry. Mfengu and Thembu farmers in particular took advantage of market opportunities in order to accumulate capital, which they re-invested in the land.[8] Other historians have identified liberalism more specifically with Victorian evangelicalism dating from the 1830s, which incorporated a concern for the rights of other cultural groups. Richard Parry, for instance, has emphasised the paternalistic side of liberalism, which promoted notions of self-improvement, a universal concept of progress and the idea that all races could become 'civilised', (according to the British interpretation of that term), and hence assimilable. [9] Citizenship was consequently open to both blacks and whites as evinced in the 1853 constitution for representative government, which created a franchise based on property qualifications rather than on ethnicity.[10] This absence of a political colour-bar was unique in South Africa, as the Afrikaner Republics and Natal excluded Africans from the colonial political process.

However, many historians have also suggested that the political dominance of this ideology was short lived and had already been

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[7] S. Trapido, 'The Friends of the Natives: Merchants, Peasants and the Political and Ideological Structure of Liberalism in the Cape 1854-1910', in S. Marks and A. Atmore (eds). *Economy and Society in Pre-Industrial South Africa* (London and New York 1980).

[8] C. Bundy, *The Rise and Fall of the South African Peasantry* (London, 1979), chapter 3.

[9] R. Parry, "In a Sense Citizens, But not altogether Citizens...": Rhodes, Race and the Ideology of Segregation in the Cape in the Late Nineteenth Century', *Canadian Journal of African Studies*, vol. 17, 3 (1983).

[10] For details on African attitudes to politics and colonial elections see S. Trapido, 'African Divisional Politics in the Cape Colony 1884-1910', *Journal of African History* (hereafter *JAH*), vol. 9, 1 (1968); A. Skillicorn, 'The Role of the Black Voter in the 1908 Cape General Election' (University of Cape Town, BA Hons. dissertation, 1975); A. Odendaal, 'African Political Mobilization in the Eastern Cape 1880-1910' (University of Cambridge, Ph.D. thesis, 1984) and his book, *Vukani Bantu: The Beginnings of Black Protest Politics in South Africa to 1912* (Cape Town and Johannesburg, 1984).

eroded by 1902. For a variety of reasons any commitment to liberal or assimilative policies came to be replaced by an increasingly discriminatory and segregationist agenda. Trapido and Bundy have attributed this change to the discovery of minerals at Kimberley and on the Rand, which created a demand for a cheap, black, migrant labour force emanating from the segregated reserves. From then on, it was no longer in the interests of the state to promote the economic enrichment of African people and future resources were concentrated on the improvement of settler agriculture to the neglect of black farmers. For Bundy the period 1902 to 1913 constituted the start of the 'fall' of the economic independence of the African peasantry.[11] Other historians, such as Lewsen, have emphasised the impact on Cape liberalism of the eastward expansion of the frontier. With the incorporation of a large African population, the political dominance of white settlers came under threat, and their defensive reaction was to alter the prerequisites for electoral citizenship.[12] From 1887 communal landholders were excised from the voter's role and property qualifications were steeply raised in 1892 to the disadvantage of blacks. By 1902 segregation had already become legitimised in the eyes of the Cape state. The Glen Grey Act of 1894 had laid the foundation stones for racial separatism in terms of both the ethnic demarcation of land holdings and the creation of alternative government structures for Africans in the form of district councils. In the cities spatial evidence of ethnic exclusion became more marked in the first decade of the twentieth century often under the pretext of disease; a process Maynard Swanson has labelled the 'sanitation

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[11] S. Trapido, 'The Friends of the Natives' and C. Bundy, *Rise and Fall*, chapter 4. However, this general argument was not necessarily applicable to all African communities in the Cape at that time. Beinart has indicated that the first decade of the twentieth century was in fact a period of comparative prosperity for the Mpondo. W. Beinart, *The Political Economy of Pondoland* (Cambridge, 1982), chapter 2.

[12] P. Lewsen, 'The Cape Liberal Tradition'.

syndrome'.[13] The failure of the Cape delegates at the National Convention to push for the extension of even a limited African franchise throughout the Union reflected the overall superficiality and the withering, if not the demise, of the Colony's commitment to liberal premises.[14]

Despite this relatively extensive literature on liberalism in the Cape, historians have been less expeditious in analysing the nature of progressivism in the Colony. In fact, there is no historical text that specifically examines this concept. Nonetheless, progressivism was an important political and cultural feature of the Cape at the turn of the nineteenth and the twentieth centuries. Like liberalism, notions of progress and improvement on the part of both individuals and the state underwrote its ideology. Progressivism was a movement that emerged after, rather than before, the capitalisation of agricultural and mineralogical output. Secular principles, rather than evangelical or moralist creeds, inspired its rationale. Materialism and science together with a desire to make existing economic, administrative and social structures operate more effectively, characterised its philosophical mantra in the Colony.

Nevertheless, liberalism and progressivism were not necessarily mutually exclusive, as liberals such as John X. Merriman also endorsed many aspects of the progressive programme. However, what was particularly distinctive between these two sets of beliefs was the fact that many anglophone and Afrikaner progressives tended to be segregationist, rather than integrationist, in outlook. Capitalist farmers, as well as the Randlords, looked to the reserves as a cheap source of labour. African progressives, on the other hand, not only

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[13] M. W. Swanson, 'The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony 1900-1909', *JAH*, vol. 18, 3 (1977).

shared the modernising agenda of their white counterparts, but also saw both education and agricultural accumulation as a means of facilitating their assimilation into colonial society.[15] For progressive blacks the potential to enhance both their political rights and their socio-economic opportunities was felt to be largely contingent upon the durability of Cape liberalism.

Historiographically, the Cape has also failed to feature, in any great detail, in the studies of reconstruction, which have concentrated primarily on events in the Transvaal. Yet, as this thesis aims to demonstrate, the first decade of the twentieth century was an active time in Cape politics and an important period in the Colony's agricultural history. Despite Jameson's association with Rhodes and the latter's mining interests,[16] the Progressive Party was very much committed to furthering the development of farming. This fact has tended to be overlooked in the literature, which has concentrated on the earlier period involving the capitalisation of the Kimberley Diamond Fields by De Beers, and Rhodes's ambitions for imperial aggrandisement.[17] Yet, key supporters of Jameson Ministry included

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[14] N. Worden, *The Making of Modern South Africa* (Oxford, 2000), chapter 4; P. Rich, *White Power and the Liberal Conscience: Racial Segregation and South African Liberalism, 1921-1960* (Manchester, 1984), introduction.

[15] See for example, A. Odendaal, 'African Political Mobilization in the Eastern Cape 1880-1910'; B. Willan, *Sol Plaatje: South African Nationalist 1876-1932* (London, 1984), chapter 2.

[16] As a doctor in Kimberley, Jameson had initially attracted Rhodes's attention through his totally unethical approach to medical practice, and the covering up of a major smallpox epidemic, which killed mainly black workers on the 'Diamond Fields' in 1883-84. In 1890, Rhodes, on behalf of the British South Africa Company, appointed him Administrator of Mashonaland, from where Jameson annexed Matabeleland in 1893, forming the boundaries of Southern Rhodesia. In a bid to seize the Rand gold mines, Jameson launched his abortive Raid on the Transvaal, with the tacit backing of Rhodes, in 1895. In 1900 he was created a director of De Beers and stood for the Kimberley parliamentary seat. On Rhodes's death in 1902, Jameson became a director of the Rhodes Trust. In 1904 he was elected MLA for the anglophone stronghold of Grahamstown in the Eastern Cape.

[17] There is an extensive historiography on all these issues, but important analyses include, on mining, R.V. Turrell, *Capital and Labour on the Kimberley Diamond Fields* (Cambridge, 1987) and W.H. Worger, *South Africa's City of Diamonds: Mine Workers and Monopoly Capitalism in Kimberley 1867-1895* (New Haven and London, 1987).

the anglophone farmers from the Midlands and the Eastern Cape who had played a leading role in the formation of the Progressive Party in 1898 and were determined to see parliament furthering the interests of rural producers (chapter 1).

Politically, the Cape, unlike the former Republics, had a system of responsible government throughout the reconstruction period. Since 1898 two parties had dominated colonial politics. Rhodes led the Progressive Party from 1898 until his death in March 1902, and Jameson replaced him the following year. Their rivals, the South African Party, narrowly won the 1898 election under the leadership of William Schreiner. This party consisted of an amalgamation of the Bond, a political organisation founded in 1883 to protect the interests of primarily Afrikaner farmers (chapter 1), and anglophone liberals such as Merriman, who had become disaffected with the policies and ambitions of Rhodes. What separated these two political groupings were their respective attitudes to external, rather than internal, contingencies. The Progressives were closely linked to the South African League, formed in the aftermath of the Jameson Raid to promote British hegemony in South Africa. They supported the South African War as a means of accelerating the economic and strategic unity of the region under imperial auspices. The South African Party, on the other hand, wished to keep imperial involvement in southern

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Rhodes and the role of the British South Africa Company in Botswana and Zimbabwe have been dealt with, for example, by P. Maylam, *Rhodes, the Tswana and the British: Colonialism, Collaboration and Conflict in the Bechuanaland Protectorate 1885-1899* (London, 1980); A. Keppel-Jones, *The White Conquest of Zimbabwe 1884-1902* (Kingston and Montreal, 1983); T. Ranger, *Revolt in Southern Rhodesia 1896-97* (London, 1967). Overviews of the Jameson Raid, include, J. van der Poel, *The Jameson Raid* (Cape Town, 1951) and J. S. Marais, *The Fall of Kruger's Republic* (Oxford, 1961). For debates on causation see, G. Blainey, 'Lost Cause of the Jameson Raid', *Economic History Review*, vol. 18 (1965); I. Phimister, 'Rhodes, Rhodesia and the Rand', *Journal of Southern African Studies* (hereafter *JSAS*), vol. 1, 1 (1974); and R. Mendelsohn, 'Blainey and the Jameson Raid: The Debate Renewed', *JSAS*, vol. 6, 2 (1980). M. Tamarkin has looked at the political alliance between Rhodes and the Afrikaner Bond and the latter's support for 'sub-imperialist'

Africa down to a minimum and was highly critical of Britain's diplomatic stance, which had led to the South African War and the annexation of the Afrikaner Republics.[18]

Nevertheless, political allegiances were not always so rigid. The resignation of Schreiner as Prime Minister in 1900 over the issue of martial law, led to the succession of the Progressive, Gordon Sprigg. However, when in early 1902 Rhodes and a faction of the Progressive Party, including Jameson, tried to obtain the suspension of the Cape constitution in a bid to accelerate South African Union under Milner's tutelage, Sprigg, who was determined to protect both his own political position and the rule of law in the Colony, turned to the Bond for support and successfully defied this challenge.[19] For the last eighteen months of his ministry, Sprigg remained partially dependent on the South African Party for parliamentary support, whilst Jameson consolidated his hold over the Progressives, whose candidates united behind a party pledge. Jameson won the first post bellum election with a small majority, which Rodney Davenport has attributed primarily to the depletion of Bond voters through the disenfranchisement of 10,000 Afrikaners purportedly guilty of treason during the War.[20] In 1903 the Progressive Party obtained only 12 of the 23 seats in the Legislative Council and 50 out of 95 in the Assembly. To try to boost their majority an Additional Representation Act was passed in 1904. As a consequence, the Progressives gained all three of the new seats in the

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expansion in *Cecil Rhodes and the Cape Afrikaners: The Imperial Colossus and the Colonial Parish Pump* (London, 1996)

[18] For a general overview of the political parties see J. McCracken, *The Cape Parliament 1854-1910* (Oxford, 1967). The most comprehensive account of the Bond during this period is T. R. Davenport, *The Afrikaner Bond: The History of a South African Party 1880-1911* (London, 1966). No detailed text exists on the Progressive Party in the early twentieth century. For the nineteenth century see Y. Sank, 'The Origins and Development of the Cape Progressive Party 1884-1898' (University of Cape Town, MA thesis 1955).

[19] T. R. Davenport, *The Afrikaner Bond*, chapter 12; E. Thielscher, 'The Suspension Movement in the Cape Colony and its Effects 1901-1904' (University of Cape Town, BA Hons. dissertation, 1962).

Upper House but only seven additions out of twelve in the Lower.[21] With a weak majority, Jameson's government remained politically vulnerable. This inevitably undermined the Ministry's ability to introduce controversial legislation, including agricultural measures such as increasing the stringency of the Scab Acts (chapter 1).

In 1904 the Progressive Party claimed the support of both rural and urban voters. The representatives of Cape Town, Port Elizabeth, East London and Kimberley were all Progressive, showing the strong links between this Party and the commercial and mining sector. The Progressives had the backing of some rural communities, including the Eastern Cape constituencies of Albany, Fort Beaufort, East Griqualand and Tembuland, together with the northern districts of Namaqualand and Bechuanaland. The South African Party meanwhile obtained most of its support from the predominantly agricultural Afrikaner heartlands of the Western Cape and the Midlands. In 1908 Jameson lost the election largely as a result of the economic depression (chapter 1) and the re-enfranchisement of many Afrikaner voters. Merriman, whose two-year ministry was dominated by the National Convention and the creation of the political basis for South African Union, took his place.

In the Cape the term 'progressive' referred to more than just the nomenclature of the principal anglophone party which featured in Cape politics between 1898 and 1910. It also constituted part of the rhetoric of commercially orientated producers, who were often, but by no means exclusively, British in ethnicity and resident in the Eastern Cape. Prominent agriculturists such as Charles George Lee, William Southey and Walter Rubidge, together with two leading ministers within the Progressive Government, Arthur Fuller (Minister of

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[20] T. R. Davenport, *The Afrikaner Bond*, chapter 12.

Agriculture) and Thomas Smartt (Commissioner of Public Works) not only saw themselves, but also self-consciously promoted themselves, as progressive farmers. Their approach to agriculture was capitalist in orientation, based on the conviction that this was the most effective way of increasing productivity to feed the internal market as cheaply as possible, of enhancing external trade and maximising profits and national income. Development necessitated the reinvestment of capital in the land. Increasing production required access to considerable financial resources. The costs incurred in constructing irrigation schemes, or purchasing pedigree livestock, as well as insecticides and herbicides, for instance, were high, effectively signifying that only a small, and comparatively wealthy rural élite could engage in modern agricultural practices. Ideologically, in order to increase yields, progressive farmers were prepared to embrace two mechanisms that became associated with rural development: a scientific approach to husbandry and the enhancement of the powers of the colonial state. Both these issues, as this thesis will show, were often highly contentious, yet they continued to form a major part of the rhetoric and agenda of both progressive farmers and politicians in the post bellum Cape.

Progressivism as an ideology, however, was neither the singular possession of the eponymous political party, nor of the vociferous anglophone farmers who positioned themselves as its most passionate advocates. Some Afrikaner and African agriculturists also engaged in capitalist forms of rural accumulation and were prepared to endorse technological and political initiatives to enhance productivity. Nor was a commitment to agricultural reconstruction solely the manifesto pledge of the Progressive Party. After the South African War, Merriman's South African Party also endorsed a modern scientific

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[21] A. Smith, 'General Elections in the Cape Colony 1898-1908' (University of Cape

approach to rural development. So too, did representatives who attended the Transkei Territories General Council, or Bunga. From 1903 African councillors from the Transkei, Tembuland and East Griqualand, together with the local Resident Magistrates, attended annual meetings in Umtata.[22] On these occasions, some of the delegates, who had often received a missionary education and were relatively prosperous farmers themselves, articulated a commitment to rural development that resonated with the ideas expressed by their settler counterparts. Thus progressivism was an ideology that was common to all races. As this thesis will demonstrate post-war reconstruction in the Cape, just as in the Transvaal and the Orange River Colony, was closely linked to concepts of modernity and notably applied to the sphere of agriculture.

Although this thesis deals with the rural economy, other important developments did take place outside the realms of farming, reflecting similarities with the United States. Jameson's government was also involved in investigating the functioning of the civil service and the judiciary, in an effort to make these structures operate more effectively and more humanely. In 1905 the School Board Act empowered districts to introduce compulsory education (for white children), subsidised by the state. Both political parties supported this initiative in an effort not just to create a more informed, versatile and competent workforce, but also to provide alternative opportunities for families who could no longer make a living from the land. There was a deliberate racial agenda, as these provisions would enable settler children to be in a position to seek skilled employment, to the

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Town, MA thesis, 1980), chapters 3 and 4.

[22] Cape Archives (hereafter CA), NA (Native Affairs Department), 652 (part 2), B2043: Memo by W. Cumming, 29 September 1903. The district councils had originated with the Glen Grey Act in 1894 and were gradually introduced throughout the Ciskei and Transkei. In 1904 11 districts had councils and sent delegates to the annual conference. By 1909 the number had increased to 16. (Figures taken from the annual reports).

exclusion of their African contemporaries.[23] This thesis does look at administrative reforms in respect of agriculture (chapters 2, 4 and 5), but a full exploration of these structures, as well as education, constitute substantial subjects in their own right, and fall outside the practical confines of this investigation.

(ii) The Historiography of Reconstruction

'A great Johannesburg, great in intelligence, in cultivation, in public spirit – means a British Transvaal'. [24]

Milner's statement on the importance of the Transvaal to imperial policy reflects the centre stage given to this region in the historiography of post war reconstruction. In this respect the literature has concentrated on three main themes. Firstly, Milner's political quest to anglicise the Transvaal, by encouraging large-scale British immigration in an attempt to ensure a pro-imperial political lobby would dominate any future South African Union. Secondly, the connection between Milner and the interests of the Chamber of Mines, which itself links in to studies on the capitalist transformation of both mining and agricultural production in the first decade of the twentieth century. These, together with the introduction of an efficient administration, have hitherto underpinned the reconstruction historiography.

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[23] These measures have been briefly covered by M. Siepman, 'An Analytical Survey of the Political Career of Leander Starr Jameson' (University of Natal, D. Phil. thesis, 1979), chapter 3. Education features in E. Malherbe, *Education in South Africa 1652-1922* (Cape Town, 1925) and V. Bickford Smith, *Ethnic Pride and Racial Prejudice in Victorian Cape Town* (Cambridge, 1995).

[24] A. Milner, reported in *The Times*, 11 June 1902, taken from W. Nimocks, *Milner's Young Men: the "Kindergarten" in Edwardian Imperial Affairs* (Duke University Press, 1968).

Milner's policies of anglicisation have been examined by several historians including Donald Denoon and S.E. Katzenellenbogen. They have argued that Milner's failure to transform the Transvaal into a region with an anglophone majority was partly a result of British scepticism about the future economic potential of the region in the light of labour shortages and struggling mining share prices. This was compounded by Milner's naive expectation that existing British settlers would automatically support the imperial project, as well as his failure to exploit divisions within the Afrikaner community, most notably the tensions that existed between *bitterenders* and *hensoppers*.[25] As a consequence, the introduction of responsible government to the Transvaal in 1906, witnessed a majority for Botha's Het Volk, which was backed by the predominantly anglophone Labour Party, and British activists who had supported a swift transition towards elective politics.[26]

Shula Marks and Stanley Trapido have provided the most notable explication of the links between imperialism and mining capital. They have emphasised the importance of the Rand gold mines, the revitalisation of which was considered essential not only for the economic prosperity of South Africa, but also for the maintenance of London's position at the centre of the international finance market. They have shown that Milner had a close collaborative relationship with the influential 'Corner House' group, dominated by Wernher Beit Eckstein, who collectively controlled about 75 per cent of Johannesburg's gold. As a consequence, Milner was prepared to cede

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[25] *Hensoppers* were Afrikaners who had surrendered to the British during the War. Some had actively collaborated in the British military effort, being absorbed into the National Scout movement. The *Bitterenders* were the Afrikaners who wanted to fight to the 'bitter end' to restore the independence of the two Republics.

[26] D. Denoon, *A Grand Illusion: Failure of Imperial Policy in Transvaal Colony during the period of Reconstruction 1900-1905* (Bristol, 1973); S. E. Katzenellenbogen, 'Reconstruction in South Africa', in P. Warwick and S. Spies (eds). *The South African War: the Anglo Boer War 1899-1902* (London, 1986).

to the Randlord's requests for specific measures aimed at reducing the cost of production. In particular, this involved efforts to secure a cheap black as well as an indentured Chinese workforce, the establishment of a more effective policing system to enforce labour contracts, together with the freeing up of trade through the abolition of concessions, such as Paul Kruger's dynamite monopoly. All of these state initiatives were complemented by a taxation regime that favoured Randlord interests. By the time of Union, the mines were productive, operating on capitalist lines, under the benevolent eye of a supportive state.[27] Thus although 'Milnerism' was a failure in terms of its attempts at ethnic social engineering, it nonetheless succeeded in enhancing the productivity of the mines.

The capitalisation of the mining industry, as Marks and Trapido have also indicated, went hand in hand with attempts to reconstruct agriculture, by transforming un-mechanised farms and semi-feudal social relations into surplus generating estates, manned by waged labourers, who could produce cheap food for the mining compounds and a potential export market. As part of the Vereeniging Agreement, the British government promised to resettle and compensate Republican farmers whose properties had been expropriated or destroyed during the War. As a result, the Repatriation Department paid out over £16,000,000 in grants and loans to Afrikaners.[28] Jeremy Krikler's exploration of agrarian change showed how Milner orchestrated an agricultural revolution 'from above', which involved the re-establishment of a collaborative Afrikaner élite on the land, with the concomitant effects of African dispossession and their gradual proletarianisation.[29] Krikler's work, which was firmly located within

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[27] S. Marks and S. Trapido, 'Lord Milner and the South African State', *History Workshop Journal*, vol. 8 (1979).
[28] T. R. Davenport, *South Africa: A Modern History* (Basingstoke, 1991), p 205.
[29] J. Krikler, *Revolution from Above Rebellion from Below: The Agrarian Transvaal at the Turn of the Century* (Oxford, 1993).

the revisionist historiography of the 1970s and 1980s, bore parallels to the approach adopted by Timothy Keegan.[30] Keegan has looked at similar developments in the Orange River Colony where British policy also focused on agricultural reconstruction with the intention of transforming the Highveld into a major maize-producing region of South Africa.[31] These rural changes were underpinned by the introduction of a more effective administration system through the establishment of an Agriculture Department, staffed by scientific experts, and empowered to offer loans to white property owners willing to invest in their land and livestock. This, as William Beinart has pointed out, demonstrated how the Cape, which had been in possession of an Agriculture Department since 1887, provided a point of reference for the development of organisational structures in the neighbouring colonies.[32]

Despite this well-developed historiography on transformations in the former Afrikaner Republics, the era of reconstruction in the Cape constitutes little more than a footnote in the literature. However, as this thesis will illustrate, the Cape, just like the Transvaal and the Orange River Colony, underwent a series of administrative reforms and rural innovations during the first decade of the twentieth century. The limited work that does exist on the post bellum Cape has little to say on agriculture and conservation. Milton Siepman has produced the most detailed account of this period in his thesis on the political

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[30] Changing historical approaches to South Africa's agrarian history and the processes underlying capitalisation, African dispossession and underdevelopment, including the 'frontier theory', the 'modernisation theory' and the 'revisionist neo-Marxist school', are clearly discussed and critiqued by W. Beinart and P. Delius in their introduction to W. Beinart, P. Delius and S. Trapido (eds). *Putting a Plough to the Ground. Accumulation and Dispossession in Rural South Africa 1850-1930* (Johannesburg, 1986).

[31] T.J. Keegan, 'The Restructuring of Agrarian Class Relations in a Colonial Economy: Orange River Colony 1902-1910', *JSAS*, vol. 5, 2 (1979) and *Rural Transformation in Industrialising South Africa: The Southern Highveld to 1914* (Basingstoke, 1987).

[32] W. Beinart, *Twentieth Century South Africa* (Oxford, 2001), chapter 3.

career of Jameson covering the years 1900 to 1912. He has postulated that Jameson was chosen as leader of the Progressive Party because his followers regarded him as the heir to Rhodes and the latter's imperialist ambitions. His thesis focused particularly on politics, detailing Jameson's rise to power, followed by an overview of his ministry and concluding with an analysis of his subsequent role in the National Convention and his position as an opposition leader in the post-Union parliament. In so far as agriculture was considered, Siepman concentrated predominantly on the suffering wine industry and Jameson's personal attempts to improve it, by abandoning the Party principle of a commitment to prohibition for non-enfranchised Africans. Implying that most viticulturists were Afrikaner, Siepman analysed Jameson's efforts to increase their retail markets in terms of a willingness to compromise with the opposition over the relaxation of liquor licences, and an overall desire to improve white ethnic relations, rather than in the context of the broader economic questions that underpinned this government's agenda. Siepman was concerned about the effectiveness, or otherwise, of Jameson as an individual, as a statesman and a politician. His dissertation did not examine the ideology of progressivism or the role others played in its promotion.[33]

(iii) The Historiography of Agriculture, Conservation and Science in the Cape

Outside the realms of politics, there is a growing literature on environmental history pertaining to the Cape, with specific studies being produced on various aspects of agricultural transformation, veld

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[33] M. R. Siepman, 'An Analytical Survey'. Agriculture is mainly dealt with on pages 163-172. The prohibition legislation referred to was the Liquor Law Amendment Bill of 1907 which was introduced during Jameson's ministry by the South African Party representative for Colesberg, Nicholas de Waal. The bill was controversial, but eventually passed under Merriman's government in September 1908.

amelioration and the growth of scientific bureaucracies. However, many of these explorations cover either different time periods, or are chronologically broader than the subject of this thesis. Thus they are obviously unable to devote the necessary space to provide a detailed analysis of agriculture and conservation in the Cape during the post bellum era.

Richard Grove has looked at nineteenth century concerns about deforestation and desiccation. His focus was on cultural and moral approaches to land degradation and the dissipation of a former, mythical southern African 'Eden'. [34] His study did not cover the twentieth century, nor did he site these concerns within a commercial economic framework. Linked to ideas of desiccation and land reclamation exists the growing historiography on the science of hydraulic engineering and the botanical amelioration of pasturage. William Beinart has provided an overview of the role played by individual farmers and official scientists in developing irrigation over several decades.[35] Both he and Lance van Sittert have analysed telluric degradation and restoration in terms of jackal and weed extirpation, and have placed these issues within the wider economic context of a progressive drive towards enhancing the stock holding capacity of the land.[36]

Ravi Rajan, meanwhile, has explored the question of imperial forestry in his study dealing with the origins and implementation of

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[34] R. Grove, 'Scottish Missionaries, Evangelical Discourse and the Origins of Conservation Thinking in South Africa 1820-1900', *JSAS*, 15, 2 (1989).
[35] W. Beinart, *The Rise of Conservation in South Africa* (forthcoming, 2003).
[36] W. Beinart, 'Colonialism and Species Suppression: Prickly Pear in South Africa', paper presented at the Conference on 'African Environments, Past and Present', Oxford, July 1999 and 'The Night of the Jackal: Sheep, Pastures and Predators in the Cape', *Past and Present*, vol. 158 (February 1998). L. Van Sittert, 'The Seed Blows About in Every Breeze: Noxious Weed Eradication in a Dynamic Environment, the Cape Colony, 1889-1909', *JSAS*, vol. 24, 4 (2000) and 'Keeping the Enemy at Bay: The Extermination of Wild carnivora in the Cape Colony, 1889-1910', *Environmental History*, vol. 3, 3 (1998).

silviculture in the Empire as a whole, which is useful for locating events in the Cape within a broader imperial context.[37] Harold Witt's investigation of forestry in Natal has revealed the importance of the transferral of Cape silvatic traditions and personnel to other parts of the region.[38] Jacob Tropp has contributed the most recent work on silviculture and has focused specifically on the Cape. He has concentrated on the district of Tsolo in the Transkei and looked at the repressive nature of colonial forest policy and its impact on African communities.[39] However, his approach did not cover the scientific aspects of Cape forestry, and since his study was limited to one district, some of his observations do not hold true when looked at over a broader geographical area at this particular time. Otherwise, literature on this subject is sparse. Apart from the work of these historians, alternative publications have largely been produced by silviculturists like Thomas Sim (in 1907), or by more recent members of the Department of Forestry, such as those who have contributed to W. Immelman's collection of essays.[40] These accounts are valuable in that they demonstrate the scientific and land management strategies of silvatic practitioners, but they did not discuss the actual impact that these incursions had on the people, both black and white, who customarily lived or worked in the forests.

This thesis expands on the historiography of silvatic and telluric conservation in a number of ways. It closely focuses on a particular time period in the history of the Colony and explores a variety of

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[37] S. R. Rajan, 'Imperial Environmentalism: The Agendas and Ideologies of Natural Resource Management in British Colonial Forestry 1800-1950' (University of Oxford, D. Phil. thesis, 1994).
[38] H. Witt 'Trees, Forests and Plantations: An Economic, Social and Environmental Study of Tree Growing in Natal 1890-1960' (University of Durban, D. Phil. thesis, 1998).
[39] J. Tropp 'Displaced People, Replaced Narratives: Forest Conflicts and Historical Perspectives in the Tsolo District, Transkei', unpublished paper (2000).

issues in detail. It demonstrates how the furtherance of irrigation schemes, as well as veld reclamation and the conservation and regeneration of timber supplies, were integral to the nature of Cape reconstruction and were fervently pursued by Jameson's government. As the thesis deals with the Cape in its entirety, it looks at the impact of state initiatives pertaining to irrigation and forestry on the Colony as a whole. By concentrating on a short time spell it is also possible to specifically delineate the concerns of Cape farmers with regard to improving the economic viability of the veld, together with their efforts to increase the amount of land under cultivation. Chapter 4, which covers irrigation and veld reclamation, adds to the historical literature by looking at the establishment of a hydraulic bureaucracy, the debates surrounding the controversial 1906 Irrigation Act, as well as significant legal disputes involving riparian rights. It also demonstrates the contested position of science in colonial society and highlights some of the tensions that existed between metropolitan and peripheral approaches to enhancing the productive value of the land. Chapter 5 deals with forestry and tackles a subject that has hitherto had very little coverage in the Cape context. The first decade of the twentieth century was an important period in the development of colonial silviculture as it witnessed the reform of the Forest Department's organisational structure and the growing consolidation of its regulatory powers. This thesis demonstrates that not all Africans were consistently adverse to colonial forest policy, nor did the colonial state totally ignore their needs. This approach is also distinctive because silviculture as a science, as an ideology and as a significant feature of reconstruction policy are all explored, together with the consequent effects of official initiatives on a variety of communities throughout the Cape.

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[40] T. R. Sim, *The Forests and Forest Flora of the Colony of the Cape of Good Hope* (Aberdeen, 1907); W. Immelman (ed). *Our Green Heritage: The South African Book of*

In addition, a notable gap in the conservationist literature is evident in relation to the changing attitudes towards the Cape's wildlife and its protection. Once again historiographical attention has centred on the Transvaal. Jane Carruthers, for instance, has explored the history of the Kruger National Park, and traced the growing concern for wildlife preservation, which was promoted for a constantly shifting pattern of agendas by political and economic élites from the time of the Great Trek to the present day. In particular she has looked at the cultural relevance of faunistic protection in the creation of a mythical, and exclusively white, South African identity.[41] However, research into attitudes towards wildlife in the Cape during this period has only really focused on analysing the impact of vermin on agricultural policy and development.[42] John MacKenzie has referred to the 1886 Cape Game Laws, which mirrored attempts to restrict hunting elsewhere in the Empire.[43] However, his study did not explore the sentimental and utilitarian ideology that underpinned a much wider conservationist movement within the Colony. Nor did he examine the specific political and economic roles that Cape governments, farmers and scientists played in seeking to protect, and at times re-create, the region's once abundant megafauna. This thesis demonstrates that conservation meant more that just the regeneration of economically important timber resources, the long-term sustainability of the veld, or the entrapment of precious water supplies. Just as Carruthers has argued that there was a growing concern about wildlife decimation in the Transvaal, so too did a

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Trees (South African Department of Forestry, 1973).

[41] J. Carruthers, 'Game Protection in the Transvaal 1900-1910', *South African Historical Journal,* (hereafter *SAHJ*), vol.20 (1988); 'Creating a National Park 1910-26', *JSAS,* vol. 15, 2 (1989); 'Dissecting the Myth: Paul Kruger and the Kruger National Park', *JSAS,* 20, 2 (1994); *The Kruger National Park: A Social and Political History* (Pietermaritzburg, 1995).

[42] W. Beinart, 'The Night of the Jackal: Sheep'; L Van Sittert 'Keeping the Enemy at Bay'.

[43] J. M. MacKenzie, *Empire of Nature* (Manchester, 1988), chapter 8.

preoccupation with the durability of the Colony's own faunal legacy feature as a principal ideological component of progressivism in the post bellum Cape.

The first decade of the twentieth century was an important time for the rural development of the Colony, not only in terms of an increase in conservationist approaches to land use, but also in respect of the growing influence of agricultural science on public policy. Research into the work of the Agriculture Department has generally concentrated on the pastoral sector. Beinart, for example, has looked at the origins of official veterinary science in the Cape in the final quarter of the nineteenth century and discussed the growing influence of these experts in determining state policy.[44] Dan Gilfoyle has recently expanded on this theme and examined the nature of veterinary science and public policy in the Cape in the years prior to Union.[45] Mordechai Tamarkin, meanwhile, has explored the controversial consequences of this scientific ascendancy in relation to farmers' reactions to compulsory small stock dipping during the era of the Rhodes-Bond partnership in the early 1890s.[46] Although Tamarkin's analysis is an important starting point for any early twentieth century discussion on scab and the growing powers of central government, his investigation did not go beyond 1898. Other historians have written about specific diseases, in particular the official response to the rinderpest epidemic of 1896-97,[47] the state-

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[44] W. Beinart, 'Vets, Viruses and Environmentalism: The Cape in the 1870s and 1880s', *Paideuma*, vol. 43 (1997).

[45] D. Gilfoyle, 'Veterinary Science and Public Policy at the Cape 1877-1910' (University of Oxford, D.Phil. thesis, 2002).

[46] M. Tamarkin, *Cecil Rhodes and the Cape Afrikaners*, chapter 3.

[47] C. Van Onselen 'Reactions to Rinderpest in Southern Africa 1896-98', *JAH*, volume 13, 3 (1972); P. Phoofolo 'Epidemics and Revolutions: The Rinderpest Epidemic in Late 19th Century Southern Africa' *Past and Present*, vol. 138 (1993); D. Gilfoyle unpublished paper 'Science and Rinderpest in the Cape Colony 1896-98' presented at the Conference on African Environments, Oxford, July 1999.

driven efforts to enumerate livestock,[48] together with economic overviews of enhanced wool and mohair production in the early part of the last century.[49]

Saul Dubow has provided an alternative perspective on the role of Cape science in the early twentieth century, by looking not at the growth of official scientific institutions, but at its function in relation to the construction of a white South African national identity in the aftermath of War. He has demonstrated how science was associated with a perception of progress and a growing sense of self-assurance, as a consequence of which the colonial periphery could commune with the metropole on more equal terms.[50] Although he gave some insights into the questions facing Cape scientists, as evinced during the visit of the British Association for the Advancement of Science to South Africa in 1905, his study did not explore, in any depth, the agricultural milieu in which many of the Colony's most prominent scientists operated during this period.

Overall, a great deal of research is still required in order to understand the role and significance played by agricultural sciences in shaping the Cape state. Notably, the existing literature does not cover the scientific efforts that were introduced specifically to improve arable output, through pedological mapping and the hybridisation of disease resistant seeds. Such lines of research as this thesis argues in the second chapter, formed important aspects of state sponsored science in the post bellum period. The Progressive Government wished to

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[48] D. Nell, 'You cannot make the people scientific by Act Of Parliament: the State, Farmers and Livestock Enumeration in the North-Western Cape c1850-1900' (University of Cape Town, MA thesis, 1998).

[49] T. Pringle, 'A History of the South African Mohair Industry 1838-1971', *South African Journal of Economic History,* (hereafter *SAJEH*), volume 4, 2 (1989); W. Beinart, 'Animal Stories: Settlers, Livestock and Environmental Regulation in the Cape, 1830-1930, in G. Wynn (ed). *Nature, Culture and Colonialism* (University of British Colombia Press, forthcoming).

augment arable yields as well as pastoral, and thus encouraged a greater deployment of technical resources towards this sector than had been the case in the nineteenth century. This is not to say that support for the livestock industry consequently waned. In fact this government also became involved in subsidising the compilation of the *South African Stud Book* in order to promote a more scientific approach to stock breeding (chapter 2); an issue that has hitherto been absent from any discussion on the pastoral economy. Nor have historians paid much attention to the rising importance of entomology as a prerequisite for intensifying agriculture. Chapter 3 of this study emphasises that entomology was no longer merely a dilettante fetish for butterfly collecting, but formed an integral part of the official scientific armoury in the war against horticultural and pastoral diseases. Much of the entomological work carried out in the Cape was innovatory in substance and, as a corollary, formed the basis of further legislative regulations, which had important repercussions in defining the role of the colonial state.

The Cape was not alone in witnessing a growing liaison between science and government. Some recent research has focused on a shared communality between anglophone settler colonies in terms of scientific development and the interchange of ideas. Yet, to date, historians have failed to take into account the part played by the Cape in the development of this cultural nexus. Thomas Dunlap has explored the different ways in which American, Canadian, Australian and New Zealand settlers interpreted their environments, yet still maintained a common ideal of rural development. He has also considered the growing specialisation of science in the nineteenth century, explaining how natural history, pursued to some extent by amateur enthusiasts, came to be replaced by the more complex

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[50] S. Dubow (ed). *Science and Society in Southern Africa* (Manchester, 2000),

discipline of ecology studied by professionally trained experts and increasingly operating in the domain of the laboratory.[51] Despite his geographically wide-ranging study, Dunlap's work did not cover concurrent developments within the Cape Colony, which as this thesis demonstrates, also underwent the growing professionalisation of agricultural science.

Ian Tyrell, on the other hand, has concentrated on the exchange of scientific knowledge that materialised between Australian governments and California during the latter part of the nineteenth century. Monterey pines from North America were exchanged for Australian eucalypts. The *Icerya* parasite (cottony cushion scale) which destroyed fruit trees in California was proven to be controllable by importing an Australian insect, the *Vedalia cardinalis*.[52] Nonetheless, Tyrell did not acknowledge the arboreal or entomological exchange, which occurred contemporaneously between these two countries and the Cape of Good Hope. This thesis illustrates, in relation to silviculture, entomology, the evolution of experimental stations and the development of pisciculture, that international connections created on the basis of both a shared knowledge of western science, and a shared belief in ecological improvement, underpinned the rationale for biotic transfers to the Cape. This exploration of anglophone intellectual networks, inclusive of the Colony, and set within the agricultural context of optimising output, provides a further dimension to the history of colonial science in the early twentieth century.

Efforts to augment yields, be it through scientific applications or protective regulations, went hand in hand with efforts to improve both

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introduction and chapter 3.

[51] T. Dunlap, *Nature and the English Diaspora: Environment and History in the United States, Canada, Australia and New Zealand* (Cambridge, 1999).

[52] I. Tyrell, *True Gardens of the Gods.*

the quality of products and the efficacy of marketing strategies. Pamela Scully has analysed the economic effects of phylloxera on land ownership in Stellenbosch and argued that wealthier entrepreneurs, with outside capital, purchased abandoned properties and invested in more modern oenological practices in an effort to improve their market opportunities.[53] However, her study covered only one district of the Colony up until 1900. Thus it did not explore the initiatives that were introduced in an attempt to mitigate the continuing economic problems that affected viticultural production in the early twentieth century. Chris Aucamp has looked at the rise of the Cape fruit industry and illustrated a substantial increase in fruit exports during the early part of the twentieth century. Although he has discussed the efforts of Jameson's Government to further the horticultural trade, his approach concentrated on statistical and economic evidence and did not explicitly consider, in any depth, the broader political and scientific issues that made this commercial growth possible.[54] This thesis examines, in greater detail, the strategies that were adopted to improve fruit production in terms of developments in entomological science and the significance of government initiatives, which in turn, expanded the interventionist nature of the Cape state. It also looks at the, hitherto largely unexplored, attempts of pastoral producers to improve the quality of their exportable fibres.

The early twentieth century witnessed the creation of a variety of co-operatives for the manufacture, the certification and the retailing of agricultural products. Yet a study of these collective ventures for the pre-Union period is almost absent from the rural historiography of the Cape. Alistair Ruiter has investigated the development of African co-

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[53] P. Scully, *The Bouquet of Freedom: Social and Economic Relations in the Stellenbosch District, South Africa, circa 1870-1900* (Cape Town, 1990).
[54] C. Aucamp, 'The Establishment and Development of a Cape Fresh Fruit Industry', *SAJEH*, vol. 2, 1 (1987).

operative movements during the twentieth century.[55] However, his real focus was on the political, economic and social contingencies, which underpinned the fluctuating fortunes of various collective schemes from the 1920s onwards. Although he did make some brief references to earlier Bunga debates on co-operative credit banks, these were not explicated in detail. Nor did the remit of his thesis include a discussion on the broader ideological and economic issues, which encouraged a greater interest in collective action in the Colony, as a whole, during the first decade of the twentieth century. As chapter 2 illustrates a number of commercial farmers, as well as the government, pioneered co-operative schemes representing important innovations in rural development strategies.

This thesis therefore makes a significant contribution to the historiography in a number of ways. To date no specific study has been carried out on rural reconstruction in the Cape. Nor has there been an investigation of the concept of progressivism as a political, economic and scientific ideology. Analysis of Jameson's career in the twentieth century has concentrated on his effectiveness as a politician and his links with Rhodes's legacy, rather than on his ministry's commitment to facilitating agricultural growth. The historiography on farming has tended to centre on the pastoral economy, whilst studies into the development of official science have only really begun to explore the work of veterinarians. Conservation, especially in terms of wildlife protection, together with an investigation of the characteristics and the social impact of state silviculture are also under-represented in the historical narrative. This thesis specifically tackles the question of Cape reconstruction, it demonstrates the varied and flourishing nature of agronomic science, it illustrates the links between the

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[55] A. Ruiters, 'The Development and Politics of Black Co-operatives in South Africa 1906-1990. A critical examination between social movement support and the formation and failure of co-operatives' (University of Oxford, D.Phil. thesis, 1993).

Colony and foreign intellectual networks, and it brings both agricultural and conservationist aspects of rural policy together in a single study.

(iv) Sources and Methodology

There exists a large amount of printed material on the nature of progressivism in the post bellum Cape, especially with regard to agriculture. Given the political nature of this topic, official documents have unsurprisingly constituted the principal primary sources for this study. The *Cape Hansard* provided invaluable information for discussing progressivism as expounded by rural politicians who helped to formulate government policy. Of particular use have also been the *Votes and Proceedings of the Parliament of the Cape of Good Hope.* These published volumes include records of the select committees, government commissions, reports of the Bunga as well as the annual reviews of the official scientists working within the Agriculture Department. What was notable about the reconstruction period was the large number of select committees convened specifically to deal with rural issues. In 1904 Jameson's government created such a body to examine the functioning of the Agriculture Department.[56] Other subjects included pastoral concerns such as the scientific breeding of livestock,[57] the more efficient administration of the Scab Acts,[58] efforts to improve the marketing of meat,[59] as well as measures to deal with the devastating bovine disease East Coast fever.[60] Viticulture was the subject of several enquiries, aimed at

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[56] Cape Parliamentary Papers, (hereafter CPP), C1a-1904: Final Report of the Select Committee on the Agricultural Department.
[57] CPP, A9-1904: Select Committee on the Angora Goat.
[58] CPP, C1-1904: Interim Report of the Select Committee on the Agricultural Department; CPP A12-1905: Report of the Select Committee on the Scab Acts.
[59] CPP, A5-1905: Select Committee on Cold Storage.
[60] CPP, A2-1908 and A7-1909: Select Committees on East Coast Fever.

trying to resurrect this economically depressed industry.[61] Two committees dealt with silviculture,[62] seven involved hydraulic engineering[63] and two focused on veld amelioration by discussing strategies for eliminating injurious biota.[64] The 1903-05 *South African Native Affairs Commission* (*SANAC*), together with the 1909 report on Native Affairs, provided some information on African agriculture.[65] Other notable committees were convened to discuss new government initiatives including the inception of state-aided co-operatives [66] and a land bank.[67] These enquiries were important because they indicated the agricultural priorities of the post bellum decade. Although the number of testifiers was small, their evidence was nevertheless significant because it illustrated the views of a selection of scientists and vociferous progressive members of rural society, who constitute the subject of this thesis. Unfortunately, however, there was a lack of African deponents, whilst the voice of poorer farmers, not to mention that of female agriculturists, was mute. The choice of interviewees indicated the kind of people to whom the state turned for advice in devising rural policy.

Together with these enquiries, the government published the annual reports of its scientific advisors. These provided a rich source of information about the nature of colonial science, particularly

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[61] CPP, G30-1905: Commission nominated by the Board of Horticulture to Inquire into the Wine and Brandy Industry in Cape Colony; A14-1903: Select Committee on Viticulture; A12-1907: Select Committee on the Sale of Liquor; A11-1908: Select Committee on Brandy Advances.

[62] CPP, A18-1903: Select Committee on Woodcutters Relief; A12-1906: Select Committee on Crown Forests.

[63] CPP, A19-1903: Select Committee on the Rooiberg Dam; C1-1903 and C7-1904 Select Committees on the System of Deep Well Boring and Diamond Drills; A11-1904: Select Committee on the Thebus Irrigation Scheme; A9-1905: Select Committee on the Irrigation Bill; A15-1906: Select Committee on Irrigation Settlements; A6-1909: Select Committee on the Irrigation Act.

[64] CPP, A2-1904: Select Committee on Destruction of Vermin; A8-1906: Select Committee on Prickly Pear.

[65] CPP, A2-1909: Select Committee on Native Affairs.

[66] CPP, A5-1907: Select Committee on Co-operation.

[67] CPP, A15-1907: Select Committee on the Agricultural Credit Bank.

important since the paucity of universities meant that official scientists, attached to the Department of Agriculture, made many of the Colony's most significant discoveries. Entomology, veterinary science, marine biology, agronomy and viticulture were all covered in these reports. These documents, especially for the first few years of the twentieth century, were detailed in terms of experimental reviews, proposals for public policy and, to some extent, they discussed the degree to which technology was actually applied. Some of these records were published, in a briefer format in the *Agricultural Journal of the Cape of Good Hope* demonstrating the fact that they were made available for the instruction of a contemporary audience. This journal also contained further details of scientific experiments, especially regarding veterinary and entomological research, which complemented the information available in the departmental reports.

The *Agricultural Journal* was the official mouthpiece of modern farming and served as the literary interface between the government and the rural community. Details taken from the annual farmers' conferences, the work of the Boards of Horticulture, together with letters from individual agriculturists feature in this thesis. Although vital for illustrating the nature of the progressive agricultural ideal, this publication, nevertheless, had important historiographical limitations. Most farmers who submitted articles were anglophone, giving the impression that progressivism was largely the preserve of Eastern Cape farmers of British descent. The pastoral economy was covered in more detail than the arable. However, reviews published in the *Cape Times* and the *South African News* indicated that Afrikaners, especially the more prosperous viticulturists in the Western Cape, were also keen advocates of initiatives such as irrigation and crop experimentation, both of which were associated with agricultural modernity. The *Agricultural Journal* also ignored African farming in its

entirety, suggesting that officialdom looked solely to the settler population to enhance productivity.

The richest source of information on contemporary African perceptions of rural progress was to be found in the annual reports of the Bunga. As with the other official publications, these accounts only reflected the ideas of a small, educated élite. Nevertheless, they indicated that some African farmers also felt economically able to conceptualise a programme of agricultural progress, from which they too could benefit. A key feature of these meetings was the councillors' interest in cultivating wattle plantations, demonstrating a certain readiness to adopt western ideas of silvatic conservation.

These published official sources were complemented by documents from the archives. Particularly useful private collections included the correspondence of the Rhodes Trust, found amongst the Milner Papers, which dealt with the sponsorship of irrigation schemes, such as the developments inaugurated during this period by the Smartt Syndicate in the Northern Cape. The Merriman Papers contained interesting dispatches between this politician and his constituents. Merriman was a passionate supporter of irrigation, and he communicated with both farmers and hydraulic engineers on this issue. The Cape Archives hold the files of the colonial Department of Agriculture. The forestry letterbooks were invaluable in the insights they provided into the enforcement of silvatic policies on the ground, as well as the variety of public responses to these regulatory measures. The correspondence found in the records of the Agriculture Department enhanced an understanding of the work of official experts in terms of the nature of their endeavours, their relationship with the agricultural community and the character of the bureaucratic structures that supported the increasingly interventionist role of the state. At a more local level, the minutes of the Divisional Council

meetings illustrated specific regional variations over issues which fell under their control, such as the extirpation of weeds and the identification of species afforded local faunal protection.

The thesis, therefore, focuses on notions of agricultural progressivism as expressed by politicians, Bunga councillors, official scientists and articulate members of the farming community. The study begins with an overview of the problems confronting agriculturists in the aftermath of the South African War as a basis from which progressive farmers and politicians sought to ameliorate production. The succeeding chapters each stand alone and serve as vignettes to illustrate specific aspects of rural progressivism. Agricultural reconstruction from the perspective of both scientific and marketing initiatives is explored in the first part of the thesis, followed by three conservationist chapters dealing with irrigation, silviculture and the protection of wildlife. The narrative locates particular aspects of rural progressivism within the political and economic context of the time. Unlike the work of Krikler and Keegan, in respect of the former Afrikaner Republics, this analysis does not examine the subject of class or labour relations. Nor does it discuss the question of land ownership and the nature of African dispossession, except over the very specific issue of access to silvatic resources. The study concludes by drawing together the principal elements of the foregoing chapters and attempts to provide some overall explication as to the characteristics of progress and reconstruction as played out in the Cape Colony in the aftermath of the South African War.

CHAPTER I

A Rural Economy in Crisis?
The Economic and Agricultural Setting Of the Post Bellum Cape

Many of our farming industries are capable of indefinite expansion. As these grow, as there seems every indication that they will, the day must arrive, and that soon we hope, when agriculture will take its rightful place in the economy of a united South Africa and become the pride and support of the whole of its people. Minerals will have their day, but the ultimate future lies with the farmers; they have but to realise their duties, their responsibilities, and their own best interests, and all must come right'.[1]

This chapter aims to provide an overview of the major issues and problems facing the agricultural sector in the aftermath of war, in the context of which both progressive farmers and post bellum governments conceptualised rural development strategies. It will also introduce the key protagonists of progress and the ideological rhetoric that they expounded in an effort to persuade others to adopt modern methods of agricultural production. The decade following the South African War was, to some extent, a period of great soul searching on the part of leading agricultural practitioners. The difficulties affecting the rural economy, together with proposed solutions, were widely discussed in Parliament and the Transkei Territories General Council,

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[1] Annual Report of the Executive Committee of the Agricultural Union of Cape Colony, *Agricultural Journal of the Cape of Good Hope* (hereafter *AJCGH*), vol. 35 (October 1909), p 449.

whilst the fora of farmers' associations and conferences provided an outlet for popular expression at a local and national level.

The Cape produced a variety of agrarian and pastoral products. Broadly speaking, viticulture and wheat cultivation, both of which were dependent on winter rainfall, were located in the Western Cape, whereas cereals such as mealies and sorghum, requiring summer rainfall were largely based in the East. Merino sheep and angora goats prevailed in the semi-arid Karoo districts of the Midlands and Eastern Cape. The Colony was the world's leading supplier of ostrich feathers, and this industry was centred on the district of Oudtshoorn and certain locations in the east. Cattle rearing, mainly for meat and hides as opposed to dairy farming, featured in the northern and eastern districts. Cattle also fulfilled an important social function in African society, which went beyond furnishing protein and draught. Bovine accumulation constituted an expression of status and wealth, and afforded a means of exchange for the provision of bride wealth, or *lobola;* an important element in the social structure of African society.[2]

In the years following the South African War two major issues underpinned the quest for agricultural amelioration: the drive to increase and diversify the volume of colonial exports and the desire to deliver the Cape from dependence upon imported victuals. Since the mid-nineteenth century the Colony had been a major exporter of fibres, in particular wool and mohair. To this was added, by the late nineteenth century, ostrich feathers, which adorned the hats and garments of European and American consumers. Yet it was the discovery of diamonds in the Vaal River in 1867 and the virtual monopolisation of this commodity by De Beers Consolidated in the late

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[2] One of the reasons why many young African men spent time working in the Kimberley diamond mines or the Rand gold fields was to earn money with which they could procure wives and establish a position for themselves in their

1880s, which resulted in these gemstones constituting the prime export product by the closing decades of the nineteenth century.[3] Nevertheless, the fear that this font of wealth was transient in nature featured strongly in the post bellum literature. This premonition was entertained by some of the mining magnates themselves. Abe Bailey for instance, suggested that 'The true El Dorado of South Africa is not in the Rand or Johannesburg, but in the soil of the country'.[4] He invested capital, amassed from diamond and gold extraction, in four properties in the district of Colesberg, because he considered rural production a securer financial proposition over the longer term.[5] These economic concerns were given greater credence in the wake of the sharp decline in diamond exports resulting from the international depression of 1907. In 1908 the returns from the diamond trade were only half that of the previous year, having fallen from £8,973,148 to £4,796,655. Collectively, the revenues that accrued from wool, mohair, feathers, skins and hides, reached £5,997,000 in 1908.[6] For the first time in years pastoral commerce outstripped that of minerals. If this slump in the diamond trade were to continue, as was predicted at the time, then the need to improve export revenues from the rural sector became all the more crucial. As a corollary, if the overall decline in mineral exports persisted, then the amount of money entering the country that could be used to purchase imported foodstuffs would be perilously reduced. Hence the development and the diversification of

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communities. See for example: W. Beinart, *The Political Economy of Pondoland*, chapter 2.

[3] R.V. Turrell, *Capital and Labour* and W.H. Worger, *South Africa's City of Diamonds*. Turrell has demonstrated that by 1888, the year De Beers and the Central Mining Company amalgamated, they were producing 50 per cent of the Colony's total exports (table, page 10).

[4] 'Abe Bailey's Farm, Colesburg', *Cape Times Weekly* (hereafter *CTW*), 29 January 1908.

[5] 'Rural Cape Colony - Colesberg', *AJCGH*, vol. 27 (November 1905), pp 644-657.

[6] *Statistical Register of the Cape of Good Hope* (hereafter *SRCGH*), number 36 1907 and number 43 1908.

the rural economy became all the more vital if the Colony were ever to attain food security.

This rationale underpinned not only the ideology of certain farmers and Randlords, but was also intrinsic to the rubric of the Progressive Party. Edgar Walton, editor and proprietor of the *Eastern Province Herald* and treasurer in Jameson's ministry, proposed that:

> We look to them (the farmers) as the mainstay of our future prosperity... The policy of any South African statesman is the development of the agricultural resources of the country. They alone remain to us as permanent and when our mineral wealth is exhausted it is to them that the country must look for its prosperity and its very existence.[7]

Commercially, therefore, the agricultural economy was centred on export production as opposed to satisfying the alimentary needs of the internal market. Many farmers remained small-scale producers. Before the South African War the Agriculture Department estimated that there were approximately 30,000 (white) farm owners in the Colony. Of these, about 5,000 received copies of the *Agricultural Journal of the Cape of Good Hope,* which was published by the government in weekly and later monthly editions.[8] These 5,000 copies were distributed to the agricultural associations frequented by progressive farmers, who self-consciously saw themselves as forming the vanguard of modern capitalist farming. Of these, 3,000 were printed in English and the remainder in Dutch, indicating that profit orientated production was pursued by both anglophones and Afrikaners, who, on that basis, constituted less than 17 per cent of the total settler farming population.

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[7] 'Comments on Farmers' Congress', *Eastern Province Herald* (hereafter *EPH)*, 22 April 1903.
[8] *Cape Hansard* (hereafter *CH)*, 29 September 1899, p 582.

Some progressive farmers stood for parliament and used this as a platform to express their ideas on productive husbandry. Others submitted articles not only to the *Agricultural Journal,* but also to national broadsheets such as the *Cape Times* and *Ons Land,* as well as to local newspapers like the *Midland News and Karroo Farmer,* based in Cradock. Although they constituted a rural minority, progressive farmers tended to be educated, articulate and fervent in their convictions about the Colony's economic potential and the ability of their contemporaries to improve their agricultural methods. Francis MacDermott's district reports in the *Agricultural Journal,* [9] together with Somerset Playne's descriptions of several hundred model farms, bore witness to the fact that there was a small, but notable, number of Cape farmers who actively invested in the land, who promoted the proliferation of irrigation, who scientifically bred pedigree stock and who diversified their commercial crops.[10] It was to these farmers, both anglophone and Afrikaner, that governments turned in a bid to reduce the Colony's reliance on foreign produce.

In 1904 the Progressive Member of the Legislative Assembly for East Griqualand, Louis Zietsman, advised parliament that during the previous year the Colony had imported and consumed £4,603,587 worth of food and £328,771 of forage. These figures included mutton, flour, wheat, oats, potatoes, processed meat and fish and 18 million eggs, all of which he contended the Cape could produce itself.[11] His constituency colleague, Charles Tod, protested that of this £5 million half went to Argentina, the principal source of the Cape's meat and dairy products, whilst North America and Australia provided the grain,

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[9] F.D. MacDermott was the editor of the *Agricultural Journal* from July 1902. His articles entitled 'Rural Cape Colony' appeared regularly from 1903 to 1910.
[10] S. Playne, *Cape Colony: Its History, Commerce, Industries and Resources* (London, 1911).
[11] *CH,* 26 April 1904, pp 354-366.

fruit and forage.[12] Both politicians believed that the Cape was falling behind other European settler colonies when it came to agricultural production. How to attain self-sufficiency was the subject of a 1905 a select committee, convened precisely to discuss the 'best means of rendering the Cape Colony self-sustaining in so far as food-stuffs are concerned'.[13] Agricultural policy focused on improving rural output as a precondition for enhancing national wealth. However, the potential for rural development has to be set against a background of prolonged economic depression, as well as the structural and cultural obstacles that challenged the success of reconstruction initiatives.

(1.1) The Commercial Slump of the Post Bellum Cape

The years 1900 to 1903 witnessed an unprecedented influx of imported goods to meet the military and nutritional needs of the imperial army, which in turn generated substantial profits for the mercantile sector, and provided additional revenue for the government in the form of customs duties. Goods imported into South Africa via Cape ports in 1901 amounted to £34,363,735, compared with the figure of £24,373,168 in 1898.[14] In the aftermath of Vereeniging, the wartime boom continued in the short term due to the importation of victuals, as well as stock and building materials, to regenerate the economy of the former republics. J. S Watson, the President of the Cape Town Chamber of Commerce, described 1902 as a boom year. Trade passing through the Colony to the hinterland, he suggested, had broken all previous records.[15] Revenues that accrued to the government in the form of customs and railway returns peaked at

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[12] Ibid.
[13] CPP, C1-1905: Report of the Select Committee on the Cost of Living, p vii.
[14] J. W. Jagger's Presidential Address to the Association of Chambers of Commerce, 25 November 1902', *Cape Argus Weekly* (hereafter *CAW*), 3 December 1902.
[15] 'Annual General Meeting of the Chamber of Commerce', *CAW*, 6 May 1903.

£9,121,346 for the year 1902-1903.[16] The optimistic conviction that the revival in gold mining would rapidly follow the cessation of hostilities, encouraged massive investment and an influx of specie which helped to galvanise a financial and speculative boom that could not be sustained over the long term. A shortage of labour held back the revival of gold mining which, when compounded with the more precipitous restocking of Afrikaner farms in the Orange River Colony and the Transvaal, had the effect of limiting the prolonged benefits that could fall to the Cape as an entrepôt in the aftermath of war. It was also an import rather than an export driven boom, which did not reflect an increase in the Cape's own economic production. By 1904 the period of rapid commercial expansion was over and Watson's successor as President of the Chamber of Commerce, J. M. Stephen, reported a 36 per cent drop in imports over the past year.[17] Total customs and railway revenue had fallen to £7,516,844. These figures declined steadily over the course of the next five years, reaching their lowest level in 1908-1909 at £4,318,430. This constituted a 48 per cent decline in comparison with the boom year of 1902-1903.[18]

The Cape was also affected by Alfred Milner's priority of facilitating gold production and his introduction of strategies that were economically detrimental to the southern colonies. In 1901 the Modus Vivendi, signed with the Lisbon government in a bid to recruit Shangaan mine labourers from Portuguese East Africa meant, in return, granting lusophone colonists preferential trade and rail rates to the Rand via the Mozambican port of Delagoa Bay (now Maputo). The comparative proximity of Delagoa Bay to Johannesburg also facilitated the appropriation of the hinterland trade by this port. In 1903 the Cape had processed over 25 per cent of South African trade

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[16] J. Hatherley, 'The Effects of the Depression after the Anglo-Boer War on Cape Politics, 1902-1910' (University of Cape Town, MA thesis, 1953), appendix 1.
[17] 'Annual General Meeting of the Chamber of Commerce', *CAW*, 3 May 1905.

with the Transvaal. By 1905 this had been reduced to 12 per cent, a figure that scarcely fluctuated over the rest of the decade.[19] The inter-colonial customs conferences convened by Milner and his successor Lord Selborne in 1903 and 1906 at Bloemfontein and Pietermaritzburg respectively, supported an agenda of freeing up internal trade, and lowering rail rates to provide cheaper food for the Rand. Lower duties undermined the fiscal security of the Cape's coffers, whilst the potential for an increase in trade through more favourable tariffs was somewhat thwarted by the Modus Vivendi.[20]

The effects of this commercial depression were most notably felt in the ports where property values fell and unemployment, or at least underemployment, prevailed. Hector Mackenzie, the Joint Manager of the Standard Bank, commented in 1906 that 'There are ... undoubted evidences of depression all round, and the comparatively empty condition of the ports from Cape Town onwards is one of the significant indications'. [21] Depression was conspicuous in Port Elizabeth, a city that had engaged in an elaborate harbour expansion scheme during the war, only to find by 1906 that the docks were almost empty, whilst the interest on municipal debts accumulated.[22] The so-called Hooligan Riots that took place in Cape Town during August 1906 were symptomatic of the effects of this slump on individuals and highlighted the inadequacy of available poor relief, as well as the failure of the state to launch sufficient public work schemes.[23] Yet a declining national income meant that the

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[18] J. Hatherley, 'The Effects of the Depression', appendix 1.
[19] J. Van der Poel, *Railways and Custom Policies in South Africa* (London, 1933), chapters 7 and 8.
[20] Ibid.
[21] London Guildhall Library, Standard Bank Records, Box 1 of 1906: Report on the Coastal Branches by H. MacKenzie to the Secretary of the Standard Bank in London, 21 March 1906.
[22] Ibid.
[23] R. Hallett, 'The Hooligan Riots: Cape Town August 1906', *Centre for African Studies, University of Cape Town*, vol. 1 (1984); E. Van Heyningen, 'Poverty, Self-

government could not afford to embark on an ambitious construction programme. Attempts to raise alternative revenues through the introduction of an income tax and an excise on brandy in 1904 failed to overcome the fiscal shortfall, and a policy of retrenchment was followed by both Jameson's and Merriman's ministries.

Economically, the events of the first decade of the twentieth century impacted on the farming community in a number of ways. War itself disrupted internal and external trade through incidences such as the destruction of crops and stock, the requisitioning of supplies by the military, the spread of equine and bovine diseases such as glanders and lungsickness by marauding armies, the disruption of the railway networks, the reduction in available farm labour, as well as the imposition of martial law and the restrictions on the movement of people and goods that this entailed. Profits from rural production fell during the War. Wool exports, for example, declined from 68,194,842 pounds (weight) in 1899 to 26,754,938 pounds the following year.[24] Economic recovery was further hampered by the severe drought that hit the Colony in 1902-1903. The north-west, an area subject to invasion by Jan Smut's commandos in 1901 and 1902, was particularly affected by siccity. The South African Party politician, A.G. Visser, described its occurrence in Carnarvon as 'the worst drought that we have ever seen'.[25] W. S. Marais, from De Aar, advised Merriman in 1904 that 'I own 15,000 morgen of land, and last year lost all my stock, and the veld was so bad that on this 15,000 morgen,

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Help and Community: The Survival of the Poor in Cape Town, 1880-1910', *SAHJ*, vol. 24 (1991).

[24] D. Hobart Houghton and J. Dagut, *Source Material on the South African Economy 1860-1970* (Oxford, 1972), vol. ii, p 39.

[25] 'A.G. Visser's speech at Carnarvon 26 December 1903', *South African News Weekly* (hereafter *SANW*), 13 January 1904. A. Davison, the Chief Inspector of Sheep, described it as the worst drought since 1862 (CPP, G28-1904, p 1).

I could not keep a living animal.....I have no money and live at present on trek'.[26]

A key feature of the wartime economy, according to the influential merchant and wholesaler, John William Jagger, was the significant rise in land values. Inflated prices were a result of a speculative property boom triggered by the belief that a considerable number of British settlers would be attracted to the Cape at the end of the War. An increase in demand for loan capital resulted in higher interest rates.[27] Expensive credit potentially undermined the ability of farmers to meet hypothecation obligations as well as restricting their ability to acquire new loans to reconstitute their plundered or drought stricken properties. The compensatory payments offered by the government for war damage were disbursed in a dilatory fashion, largely due to the depression, and by 1908 many farmers had yet to receive such remittances.[28] Thus the effects of war, especially for poorer farmers who were not in a position to take advantage of the peace time recovery in pastoral trade, far outlived Vereeniging.

Farmers were also affected by the slump that hit the coastal cities. Inflation and high food prices restricted the amount of produce that consumers could afford to purchase. This in turn created political and economic tensions between those who supported a free trade policy and those who sought protection. In general, farmers tended to seek protective tariffs on imported foodstuffs, whereas the mercantile community, speaking on behalf of urban populations, endorsed free trade, claiming this was the only way of reducing the

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[26] Letter W.S. Marais to J.X. Merriman, 27 May 1904. South African Library (hereafter SAL), Merriman Papers, MSC 15, Box 24, no. 141.
[27] J.W. Jagger's Presidential Address, 25 November 1902.
[28] For details on the War Losses Compensation Commission, see M.R. Siepman, 'An Analytical Survey', pp 121-125.

cost of living in the cities.[29] Merchants and traders also opposed tariffs as they regarded them as a form of taxation that inhibited the growth of their businesses. Debates in the media and parliament revolved around the issue of the re-imposition of a meat duty: a tax that had been abolished in 1898 by William Schreiner's government, due to a shortage of meat following the rinderpest epidemic.[30] However, politically influential farmers such as the merino and angora breeder, Walter Rubidge, argued that the removal of this duty had not had the intended effect of reducing food costs. Rather the cold storage companies, which had come to monopolise the meat trade, raised their prices.[31] Despite the Progressive Party's electoral pledge to try to lower the cost of victuals in the cities (where many progressive supporters resided),[32] Jameson agreed to re-introduce a meat duty of 1d per pound in 1906. This was passed despite vociferous opposition from free traders in the Progressive Party, such as Jagger, and demonstrated the influence of the pastoral lobby in Cape politics.[33] Rural and urban communities did however unite in their bid to reduce the powers of the six cold storage companies, the so-called 'Meat Ring', which effectively controlled prices through a cartel system. Referring to anti-trust legislation pursued by Theodore Roosevelt in the United States, Jagger succeeded in getting a bill through parliament, which theoretically reduced the ability of these monopolistic companies to engage in price fixing and the intimidation of independent butchers.[34] In this case, both farmers and traders could benefit from this freeing

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[29] See for example the debates in the House of Assembly on the 'Meat Duties', *CH*, 28 March 1905 and the 'Pietermaritzburg Customs Convention', *CH*, 28 May, 30 May, 8 June and 30 June 1906.
[30] *CH*, 28 March 1905, pp 122-132.
[31] CPP, C1-1905: Evidence of W. Rubidge, pp 164-182.
[32] 'The Progressive Manifesto', *CT*, 14 September 1903.
[33] *CH*, 11 June 1906, pp 105-112. The vote to reintroduce meat duties was passed 77:22.
[34] 'Meat Trade Bill', *CH*, 26 June, 2 August, 10 August 1906. The Act banned combination for the purpose of setting up a monopoly to regulate prices, facilitated

up of internal trade. Although there was often conflict between the economic priorities of town and countryside, both sides shared a desire to enhance the profits of their own economic sectors. More production in the countryside, be it foodstuffs or exportable fibres, brought more opportunities, more work and more prosperity to the coastal towns, and concurrently reduced the cost of provisioning the hinterland settlements, such as the mining compounds of Kimberley.

Despite limited protection, fiscal retrenchment threatened to obstruct a dramatic leap forward in rural production. Although the Progressive Government was committed to facilitating agricultural growth, the reality of the economic situation meant that cuts in civil service spending limited the opportunities for increasing the number of scientific personnel available to advise farmers (below and chapter 2). Money was also lacking for the development of numerous experiment stations and agricultural colleges, whilst rewards payable for the destruction of wild carnivora were reduced, and in January 1907 temporarily abolished (chapters 2 and 6). Loans theoretically available to help farmers organise their own irrigation projects or construct jackal proof fencing were also curtailed (chapters 4 and 6).

(1.2) Internal Challenges to Rural Development

At the turn of the twentieth century all branches of agriculture, with the exception of feather and fruit production, were held to be in a state of crisis. In 1904 the first census since the South African War was carried out. Despite the dubious accuracy of statistical findings, these figures nevertheless formed a point of reference for politicians and farmers who wished to urge their compatriots and the state to

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the licensing of independent butchers to further competition and empowered the courts to deal with suspected monopolistic practices in the meat trade.

devote more attention and funding to the amelioration of the rural economy.[35] The rinderpest epidemic of 1896-97 was responsible for the demise of hundreds of thousands of cattle especially in the Transkei, where death rates peaked at almost 90 per cent of the bovine population.[36] Although numbers were recovering, the 1904 census recorded a drop from 2,210,834 head of cattle in 1891 to 1,750,742 in that year. Disease and recurrent droughts also caused the ovine population to decrease by over 30 per cent from 16,706,106 to 11,436,788 for the same period. Goat numbers too had declined, the valuable angora having dropped from 3,184,018 head in 1891 to 2,731,795 head 13 years later.[37] Falling commodity prices on the international markets and a consequent reduction in national income exacerbated concerns. In 1904 the revenue that accrued from wool exports, for example, amounted to £1,794,624.[38] This was a far cry from the boom years of the 1870s when the Colony could earn over £3 million from its merino flocks.[39]

The decline in pastoral output resonated with crises in the agrarian economy. The 1904 census showed a significant drop in the yields of all the major cereal crops. Rye had allegedly declined by 47 per cent, wheat 39 per cent and mealies 22 per cent between 1891 and

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[35] D. Nell 'You cannot make the people scientific by Act of Parliament'. Concentrating on the encounter between the State and the trekkboer farmers of the North-Western Cape, Nell has demonstrated the difficulties in collating accurate figures. Many farmers resented state incursions and obstructed this process. The state lacked the personnel to carry out a thorough enumeration programme. Contemporaries such as Eric Nobbs, the Agricultural Assistant, were critical of the poor methods used to collect statistics and argued that planning for development could not occur until a more scientific means of recording data was introduced. CPP, G12-1903; G39-1904; G47-1906; G30-1907.

[36] C. Van Onselen 'Reactions to Rinderpest'; P Phoofolo 'Epidemics and Revolutions'; D. Gilfoyle 'Science and Rinderpest'.

[37] CPP, G19-1905: Census of 17 April 1904, p 480.

[38] *SRCGH,* 1904.

[39] W. Beinart has argued that 1872 was the peak year for exports, which reached £3.3 million. He attributed the decline in revenues to the virtual cessation of the production of farm washed wool for which higher prices were paid on the London markets. 'Animal Stories', in G. Wynn (ed). *Nature, Culture and Colonialism.*

1904.[40] Viticulturists meanwhile continued to experience the consequences of phylloxera (*Daktulosphaira vitifoliae*). Since 1886 this parasitic insect had swept its way through the vineyards of the Western Cape. Attempts to cultivate phylloxera resistant American vines had not been an overwhelming success and by 1904 only 25 per cent of plants had been effectively grafted.[41] Some of the wealthier wine farmers in the worst affected areas of Paarl and Stellenbosch, together with enterprises funded by British capital such as the Cape Orchard Company, had tried to revitalise the local economy by moving into horticulture. Consequently, the 1890s had witnessed the emergence of a burgeoning export trade in citrus and deciduous fruits (chapters 2 and 3).[42]

The 1904 census also estimated that the population had grown by 882,580 since 1891. Proportionately the increase was most marked in the cities. The number of inhabitants in Cape Town, for instance, had more than doubled between these years.[43] The development of mines and growing urbanisation exacerbated concerns about how the Colony was to feed itself in the longer term.[44]

Politicians and farmers sought to explain the crisis in agriculture in order to devise solutions, which would facilitate a revival in the rural economy. Underdevelopment was attributed to a variety of natural, structural, environmental, social and managerial causes. The

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[40] Calculated from the 1904 census, p clxxxi.
[41] Ibid., p clxxxiii. The census enumerated 77,893,187 vinestocks in the Colony of which 19,237,259 had been grafted. Phylloxera is believed to have originated in the Eastern United States. Foliar phylloxera causes premature defoliation, prevents shoot growth and reduces the yield and quality of crops.
[42] Ibid., p clxxxiv. Apple production, for example, had almost doubled between 1891 and 1904. Major increases were also noted with regard to oranges and apricots. Paarl was the major centre of the fruit industry. For the Cape Orchard Company see C. Aucamp 'The Cape Orchard Company: Its Contribution to the Fresh Fruit Industry of the Western Cape 1892-1900', *SAJEH,* vol. 4, 2 (1989).
[43] The population of Cape Town increased from 78,666 to 169,641, (G19-1905, p xlvi).
[44] For example, Merriman's speech at Somerset Strand, *CTW,* 2 August 1905.

vagaries of climate could have a significant effect on annual outputs. The country was subject to periodic droughts, which depleted stock numbers and consequent trade figures. According to the Chief Inspector of Sheep, Allen Davison, the severe drought of 1902-1903 caused the death of over two million small stock.[45] Given that wool and mohair were the principal pastoral exports, any decline in ovine or capral numbers posed as a direct threat to trade figures. Drought also affected parts of the Transkei and Bechuanaland. Here African people, in particular, were vulnerable to the threat of starvation and became dependent on the state for the distribution of mealies and free seeds.[46] Irrigation schemes were very much in their infancy and farmers were still reactive in dealing with aquatic shortages rather than proactive in forestalling them (chapter 4).

The degeneration of the veld through overstocking (chapter 4) and the exhaustion of the soils due to general ignorance, or indifference, to scientific methods of farming was also problematic. The decline in wheat production from 884,742 muids in 1891 to 535,592 in 1904 was attributed not only to the ravages of a fungal disease known as rust, but also to poor cultural practices. D. B. Redler, Manager of the Kaffrarian Steam Mill Company in King Williams Town, related how farmers failed to choose the right seed to suit the soil and climate. Many agriculturists, he argued, were nescient of crop rotation and the use of fertilisers, harbouring a fatalistic tendency to blame the weather and poor soils for their low yields instead of looking to ameliorating agricultural methods. In 1890 the predominantly Mfengu district of Peddie in the Eastern Cape, once produced £20,000 of wheat a year, Redler contended. By 1906,

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[45] CPP, G28-1904: Report of the Chief Inspector of Sheep, p 1.
[46] For example, CA, NA 516, A355: 'Distress amongst natives – Kentani, Tembuland'. NA 605, B1660: 'Issue of mealies to starving natives, Mount Fletcher, 1903-1905'. NA 605, B1661: 'Distress in Kuruman, 1903.'

the exhausted land scarcely yielded £500 worth of grain.[47] Similar views were expressed about the Western Cape. Here areas such as Ceres had undergone a major decline in cereal production since the 1870s.[48] In 1908 the Director of Agriculture, John Noble Jack, blamed monocultural practices for land degradation and the failure of farmers to accumulate adequate capital to re-invest in the land, or to withstand periods of crises. The panacea for cultural improvement, he argued, was to preserve the soils and maximise yields by engaging in mixed farming.[49] Diversification, consequently, became associated with progressive husbandry.

Diversification however required capital; a commodity many farmers were unable to draw upon consistently. Lecturing nine years after Union, William Macmillan described land holding in terms of a great economic divide between 'a smaller number of really progressive, well-to-do farmers' with the money to invest in productive agricultural methods, and a larger proportion who live 'very near the margin, almost bound to come to grief in the next run of bad seasons, or when the growth of the family leads to the break up of larger farms'.[50] Many of these more prosperous agriculturists, Macmillan's so called 'cheque book farmers', were men who had accumulated their original capital in industries other than farming. Randlords like Abe Bailey and Cecil Rhodes,[51] together with those who had spent a shorter period at the mines, such as John Merriman and Charles Kohler, invested their industrial capital in the land and operated their farms for a profit. Some landowners made money through the

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[47] 'South African Wheat: Interview with D. B. Redler', *CTW*, 7 February 1906.
[48] A. Burton, *Cape Colony for the Settler: Its Urban and Rural Industries, their Development and Extension*, (London, 1903), part ii.
[49] J. Noble Jack, *AJCGH*, vol. 33 (September 1908), pp 291-294.
[50] W. Macmillan, *The South African Agrarian Problem and Its Historical Development* (Johannesburg, 1919).
[51] In 1897 Rhodes bought seven farms in the Groot Drakenstein Valley for commercial wine and fruit production. Details of the Rhodes Fruit Farms and the properties of other commercial producers can be found in S. Playne, *Cape Colony*.

professions, perhaps, most notably, the politician Thomas Smartt who continued to practice as a doctor whilst his syndicate ran extensive land holdings in the Britstown District of the Northern Cape.

In contrast, poorer farmers could not afford to take the risk of diversification because they lacked sufficient resources to fall back on if things went wrong. By the twentieth century the issue of 'poor whiteism', generally associated with immiserated Afrikaners, had emerged as a political concern. Saul Dubow has illustrated, with reference to the Karoo, how 'the root cause of poor whiteism was the pressure on land associated with the incorporation of the Cape into the world capitalist system.'[52] As a result of the growth in commercial fibre production from the 1840s, social stratification increased as wealthier farmers laid claim to the remaining crown lands thus depriving subsistence pastoralists of grazing areas. Poorer farmers, identified as *bijwoners*, were often dependent on tenancy agreements with more prosperous landowners to attain pasturage for their stock. Economically, they survived on the margins of pastoral society. A severe drought could decimate their flocks and drive them to the brink of indigence.[53] Similarly, in the Western Cape, where farms tended to be smaller and sub-divided, disasters such as phylloxera threatened to destroy the livelihood of farmers who lacked the means to re-constitute their vinestocks or diversify production. As the quitrent records demonstrated phylloxera brought insolvency and foreclosure to some, whilst others struggled to subsist. [54]

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[52] S. Dubow, 'Land, Labour and Merchant Capital: The Experience of Graaff Reinet District in the Pre-Industrial Rural Economy of the Cape 1852-1872', University of Cape Town, *Communications*, 6 (1982), p 58.
[53] S. Dubow, 'Land, Labour and Merchant Capital'; C. Bundy, 'Vagabond Hollanders and Runaway Englishmen: White Poverty in the Cape Before Poor Whiteism', in W. Beinart, et al. *Putting a Plough to the Ground.*
[54] In the 1880s many poorer viticulturists sold their phylloxera infested properties, often for small returns. Two such farms included 'Riverside' and 'Schoongezicht' bought by Kohler and Merriman respectively in the early 1890s. For stratification in

In 1905 the Western Province Board of Horticulture examined the severe depression affecting viticulture and suggested that many farmers were faced with ruin as there was no alternative form of agriculture that they could viably undertake.[55] Ironically, despite the fact that many farmers were re-planting their vineyards with phylloxera resistant stock, the demand for Cape wine and brandies at home and abroad was limited as a consequence of the economic recession, the dubious potability of the beverages, government fiscal policies and restricted licensing (below). The obvious solution, perhaps, was to engage in an alternative form of agriculture. However, soils in the Western Cape tended to be deficient in lime and phosphates and were unable to sustain other crops without costly investment in manures and fertilisers.[56] Suggestions that vignerons should convert from wine making to more marketable raisin production were dismissed by witnesses such as the wine merchant H. Barry and the Montagu farmer E.P. Burger as impractical, for this would be a hazardous commercial venture with which most viticulturists could not afford to experiment.[57] The purchase of evaporators and chemicals such as sulphur for preserving dried fruit required more capital than many farmers could provide.

Concurrently, there were inadequate credit facilities for those who could not furnish the required predial security.[58] Deponents

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viticultural land holding in Stellenbosch see P. Scully, *Bouquet of Freedom*, chapter 2 and her conclusion.

[55] CPP, G30-1905: Report of the Committee Nominated by the Western Board of Horticulture to inquire into the wine and brandy industry in Cape Colony, p 1.

[56] C. Mayer, 'Reflections on the Needs of Colonial Viticulture', *AJCGH*, vol. 21 (July 1902), pp 67-69.

[57] CPP, G30-1905. See for example the report of Charles Heatlie and the evidence of the Robertson merchant, H. Barry pp 26-28 and that of the Montagu farmer E.P. Burger, pp 21-22.

[58] H. Giliomee, 'Western Cape Farmers and the Beginnings of Afrikaner Nationalism 1870-1915', *JSAS*, vol. 14, 1 (1987). Giliomee has argued that some wealthy Afrikaner landowners formed their own banks in the Western Cape to provide short-term loans for farmers based on the security of the harvest. However, the ability to

called before the committee convened to discuss the possibilities of setting up an agricultural credit bank in 1907 complained about the high rate of interest charged by banks and independent moneylenders. Michiel Pretorius, for instance, explained how some farmers in Middelburg were forced to defray interest rates of up to 20 per cent a month. Some had hypothecation bonds, which were passed on from generation to generation, thus it would be impossible for these people to obtain additional credit to improve their land holdings. Others farmers, Pretorius reasoned, were unable to afford the continued investment in merino sheep, or to meet the costs of scab eradication, and thus transformed their flocks into Persian and bastard breeds, depriving the Colony of potential wool supplies.[59] Christian Watermeyer, a farmer from Graaff Reinet, enthusiastically endorsed the Progressive Government's proposed credit scheme, which comprised of a lower interest rate of five per cent and a one per cent sinking fund to ensure eventual redemption of the debt. This, he stated, would fulfil 'the greatest want in the country as far as I can see'. [60] Such indebtedness reflected the underlying structural problems in the organisation of the rural economy.

Agriculture was also impeded by difficulties in attracting labour. Farmers were reluctant to employ white workers as they demanded higher wages and were seen as potentially harder to control. At the turn of the twentieth century the labour shortage was particularly acute as people could find alternative work by participating in the war effort or by becoming involved in public work schemes, such as

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convince moneylenders that their advances were a secure investment still precluded poorer farmer.

[59] CPP, A15-1907: Select Committee on the Agricultural Credit Bill, evidence of Michiel Pretorius, pp 117-129.

[60] Ibid., Evidence of Christian Watermeyer, p 99. Two days before the fall of Jameson's government, the Agricultural Credit Bill was passed (17 September 1907), but due to the economic depression, loans were not forthcoming. A Land Bank was eventually set up in 1912.

railway building and harbour development. As the economic depression took hold, many Africans sought employment on the Rand.[61] Industrial employers tended to offer higher wages and were thus able to attract more workers. William Goulden, secretary of the Eastern Province Board of Horticulture, complained that: 'Those who were progressive and anxious to make headway were absolutely handicapped by the fact that they could not get labour to work on the farms'. [62] In 1903 and 1904 the Western Province Board of Horticulture tried to obtain indentured horticultural labourers from Italy, Switzerland and Spain. These schemes failed officially because European governments refused to accept the low levels of remuneration offered to their nationals.[63]

Viticulturists, especially, relied on the tot system to attract labour, whereby wine and brandy were cynically offered as a partial substitutes for wages. An attempt in 1904 by the Progressive Party councillor, C. Owen Lewis, to introduce legislation that would prohibit payment in alcohol was defeated by 13 votes to seven in the Legislative Council.[64] This emphasised the vulnerability of the capitalist economy in the face of rural labour shortages. Viticulture, fruit and wheat cultivation all required large numbers of seasonal workers whom it was difficult to recruit. Some vignerons proffered loans and promises of alcohol to encourage workers to return to their estates the following season.[65] Indebtedness and institutionalised alcoholism had already become a means of tying coloured workers to the land. The inability, or refusal, to offer wages commensurate with those paid by the

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[61] C. Bundy, *Rise and Fall.* Bundy has suggested that the number of men from the Transkei leaving for the Rand, for example, increased from 7,105 in 1899 to 14,806 in 1903 and up to 25,000 in 1908. (p 121).
[62] *AJCGH,* vol. 22 (1 January 1903), pp 58-59.
[63] *AJCGH,* vol. 22 (January 1903), pp 48-51; April 1903, pp 421-423; vol. 24 (January 1904), pp 62-64. Men were offered 2s 6d per day and women 1s 3d. Workers would also get a small cottage and a plot of land.
[64] *CH,* 8 April 1904.
[65] P. Scully, *Bouquet of Freedom,* chapter 4.

industrial sector highlighted a major weakness in the rural economy. Production costs had to be kept down to a minimum, not just to optimise profits, but often just to be able to break even. Without adequate and skilled labour, inevitably the growth of the rural economy would be restricted.

The disadvantages of a shortage of labour were exacerbated by the concurrent lack of mechanisation. The Superintendent of Agricultural Co-operation, Patrick Hannon, advised a 1907 select committee that: 'In these days without modern agricultural machinery, agriculture practically disappears in competition with the rest of the world'.[66] Yet, he continued, farmers were only just 'beginning to understand ..... the relative merits of machines'.[67] Hannon believed that the government should experiment with the manufacture of technical equipment, especially adapted to the Cape environment, in order to demonstrate to farmers the advantage of using windmills and water pumps, as well as threshing and shearing machines to increase yields and reduce their dependence on a prolific labour supply.[68] In the *Agricultural Journal* it was also suggested that the value of mechanisation was not fully recognised even amongst influential sheep breeders despite the fact that the Colony's main competitor, Australia, had been using shearing machines for years. Whereas an experienced clipper could process 120 to 150 sheep a day, it was estimated that with mechanised shearers this could be increased to a quotidian rate of 280.[69] However, modern technology was an expensive investment. Many farming appliances had to be imported from America or Britain. Machines, such as windmills, which were designed abroad often broke down, were difficult to repair, and were

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[66] CPP, A13-1907: Select Committee on the Manufacture of Agricultural Machinery, p 1.
[67] Ibid., p 2.
[68] Ibid., p 6.
[69] 'Editorial Notes', *AJCGH*, vol. 22 (January 1903), pp 12 – 13.

too lightly built to cope with the weather conditions of the Cape, thus few lasted as long as ten years.[70] A lack of mechanisation was also a consequence of the absence of a strong manufacturing base in the country. To encourage a more technological approach to farming, the government allowed machinery and fencing wire to be imported into the Colony without the payment of duty. For businessmen the absence of tariff protection was a deterrent to developing a viable engineering industry focused on the production of agricultural equipment. [71]

As well as a lack of technology, there existed an inadequate system of agricultural research and education. In 1903 the recently appointed agricultural assistant, Eric Nobbs, explained in his annual report how there was a desperate need for experiment stations in the Cape. He pointed out that in America such a station could be found in every state. Canada too had several institutions and even Natal and Transvaal were developing these facilities. The Cape, he feared, instead of posing as the progenitor of scientific development in South Africa was losing its progressive edge and becoming a mere recipient of knowledge and modernisation. Science once regarded as 'a fair butt for bucolic wit', Nobbs contended, was now integral to rural growth. [72] He argued that to date the advice given to farmers in the Cape by government experts was often based on experiments and experiences recorded in other parts of the world. As a result advisors were 'seldom able to base their statements on the authority of colonial experience'.[73] Without an analysis of soils and precipitation rates and without scientific trials to determine which varieties of seeds and crops could flourish in the Cape environment, it would be impossible, he claimed,

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[70] CPP, A13-1907: Report of A. Vanes and his comments during the testimony of T. Smith, p 22.
[71] Ibid., Evidence of H. Gearing a director of Cunningham and Gearing, purportedly the largest workshop in South Africa after De Beers, pp 35-45.
[72] CPP, G12-1903: Report of the Agricultural Assistant, p 9.

to raise the food producing capacity of the land and 'to make two blades of grass grow where one grew before'.[74] Nobbs accused past governments of ignoring the agrarian sector. In 1904 he wrote: 'As yet the government has done little to encourage the arable farmer, as compared to the help given to wine and stock farmers, or in comparison to what has been done for this same class in other countries'.[75] The official viticultural expert, Raymond Dubois, articulated similar views. In 1903 he stated that there was a desperate need for a central experiment station to investigate vinestocks. It was seventeen years since phylloxera had arrived in the Cape and yet, in his view, there had been no rigorous research into why certain varieties of grapes, such as the hanepoot, would not graft on to American stocks. Nor had there been trials to see which varieties of vines provided the most fruitful yields. The Colony also needed an oenological station to examine the fermentation and maturing of wine and brandy in order to improve the quality of the vintage.[76] Dubois urged viticulturists to enter the modern scientific age for 'the time is past when mere hard work without the use of brains, will command success'.[77]

Many commercial farmers agreed. In 1905 Dirk de Vos Rabie of the Western Board of Horticulture suggested that:

> If it pays manufacturers to carry on experiments... how much more is not a vital necessity to such a great industry as farming, and more especially in a country in which farming is not making that progress which it

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[73] Ibid.
[74] Ibid.
[75] CA, AGR (Agricultural Department) 373, F1522: Report from E. Nobbs to J. Chamberlain, November 1904.
[76] CPP, G20-1904: Viticulturist's Report. The Appendix dated 18 May 1903 details his initial impressions on viticultural development, which were re-iterated in subsequent reports.
[77] CPP, C1a-1904: Final Report of the Select Committee on the Agricultural Department, Appendix D.

should, where it is apparently not taking a hold upon the people, and where, unfortunately one hears from all sides the wail that it is not a profitable business..... we do not want to be shewn [sic] how to grow potatoes etc, but how to grow them on certain soils at a profit. Again we do not merely want to be shewn [sic] how to make wine but to make a wine that will command either a local or foreign market. We want to be taught how to feed a cow with the minimum of food to produce the maximum amount of milk or butter.[78]

Pastoral farmers from the Eastern Cape echoed these views before the 1909 Select Committee on the Agricultural College. In 1898 an agricultural institution had been founded at Elsenburg near Stellenbosch in the Western Cape. Since then the annual reports of both the Farmers Congress and the Agricultural Union had urged governments to look into the possibility of establishing an experiment station and agricultural college in both the Midlands and the Eastern Province. The 1909 committee endorsed this objective on the grounds that Elsenburg dealt primarily with the agrarian needs of the Western Cape, whilst the pastoral economy of the Karoo was neglected.[79] The Cradock stock farmer, Paul Michau, categorically told this audience that 'we require a little more science to teach our young farmers to make use of scientific methods, even with stock. We farm in a careless way, and we would like to improve on the present class of farming.' 'In my opinion', he continued, 'we are very much behind other countries, and if this is to become a self-supporting country we must make more use of scientific methods than we have done up to the present'.[80] A lack of knowledge manifested itself in the poor choice of crops and

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[78] CA, AGR 537, M2: C. Mayer to Duncan Hutcheon (Director of Agriculture) detailing the resolutions of the Western Board of Horticulture, dated 20 September 1905.

[79] CPP, A1-1909: F. S. Malan, Majority Report of the Select Committee on Agricultural College. The annual reports of the farmers' annual conferences can be found in the *AJCGH*. Grootfontein Agricultural College and Experiment Station was founded in Middelburg, Eastern Cape, in 1911.

[80] Ibid., p 129 and pp 133-134.

breeds of animals, an ignorance or indifference to the use of fertilisers and crop rotation, the presentation of poorly prepared products for sale, the failure to provide forage for dry seasons and a suspicion of veterinary surgeons and scab inspectors.

The wine industry provided a focal point for much of this kind of criticism. In his report on Cape vineyards written in 1907, Dr. A. Perold described his visit to 25 farms in the Western Cape where he observed production methods and offered viticultural advice. The best grape for white wine he suggested was the Vaalbaar Steen, however, only five per cent of farms he inspected had introduced this variety. Some farmers planted their vines in vleis instead of on the slopes of hill to facilitate drainage.[81] Cape wines and brandies were notorious for their poor quality. The judges' report, commenting on Cape produce displayed at the South African Exhibition held in London in 1907, was damning. It stated that 'some few were quite brilliant and well bottled, some were only in fair condition but not what they should be, and several samples were decidedly cloudy, which, in this Country, would render the wines practically unsaleable'.[82] The problems lay in methods of production. Farmer lacked the capital to invest in fustage and used primitive cellars, which were little more than general storage rooms. Instead of waiting three years for the wine to mature, viticulturists sold their concoctions within a few months in order to receive payment before it turned into vinegar. The need to obtain immediate cash in order to subsist until the next season highlighted the structural weaknesses of the oenological economy. Merchants bought the wine from individual farmers and fabricated a vintage by adding sugar and preservatives such as salicylic acid or flavourings

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[81] CPP, G47-1907: Report of the Superintendent of Agricultural Co-operation, Appendix C.
[82] CA, AGR 480,C2. The report was dated 17 April 1907.

such as carbonate of soda.[83] Many of these additives had been prohibited in other countries. J. Lewis, the chemical analyst working at the Government Analytical Laboratory in Grahamstown, was concerned about the deficient and potentially harmful methods of production: 'It becomes necessary for the wine-merchant in order to get a liquor which suits the public taste to supply the flavour by means of foreign, undesirable substances', he wrote.[84]

Of all the sectors of the agricultural economy, it was viticulture that remained in the greatest state of crisis throughout the first decade of the twentieth century. During this period the politician and wine farmer, Charles Kohler, emerged as the leading spokesman for this beleaguered industry. In his memoirs Kohler recalled:

> In 1906 the wine industry was still in a dreadful plight. Wine was being produced in quantity but the export trade was as dead as mutton and the annual surplus could have floated a mighty battle fleet. Prices were naturally and dangerously and desperately low.[85]

He claimed that before the South African War, brandy had retailed at about £20 a leaguer and wine at £6 per leaguer. By 1906 prices had fallen to £6 for brandy and £1 7s 6d for wine. Such low prices did not

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[83] For viticultural techniques, see CPP, A14-1903: Report of the Select Committee on Viticulture, testimonies of Rene Sathagens (pp 31-41) and Lorenz Franke (pp 53-63). CPP, C2-1905: Select Committee on Colonial Industries, the evidence of H.P. Hollway, pp 23-32. CPP, G30-1905: testimonies of C. Klopper and P. Myburgh, (pp 32-33 and 61).

[84] CA, AGR 483, C5: J. Lewis to T. Berrange, private secretary to Thomas Smartt, June 1906.

[85] A. Joelson *The Memoirs of Kohler of the KWV* (London, 1946), p 76. Before Gladstone's free trade treaty with France in 1861, the Cape had been able to sell wine on the London markets. However, as the quality of Cape vintages declined compared with European varieties, Cape produce was gradually squeezed out of this market to be replaced by French and German wines, which were more palatable and cheaper due to more modern production methods and their geographical proximity to London.

even cover the cost of processing.[86] Wine production, Kohler argued, had decreased during the 1890s, yet the population had grown, thus the decline in revenues could not simply have been a consequence of over-production.[87] The previous year the Western Board of Horticulture, of which Kohler was then president, reported that many viticulturists and wine merchants were in possession of large quantities of wine and brandy, which they were unable to sell due to the artificial limitations placed on the market by legislation. Many wine producers believed that sales had declined as a result of the introduction of a six shilling excise duty on a gallon of brandy in 1904. The Progressive Government was accused of placing an unfair financial burden on one sector of the economy, at a time when the wine industry was trying to recover from phylloxera.[88] Concurrently, the Transvaal operated a 15 shilling per gallon tariff on imported beverages from the Cape. This was considerably higher than the six shilling duty in operation before the South African War.[89]

Viticulturists also felt that their market was being strangled by unjust, inconsistent and restrictive regulations. Since 1891 alcohol vending establishments had to be licensed by specially designated courts, members of which were elected by the local people. In 1907

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[86] Figures taken from his 'open letter' reproduced in the *SANW*, 24 March 1909, in which Kohler sought to attract public attention to the plight of wine farmers and planned public demonstrations in Cape Town for the autumn and winter of 1909.
[87] Kohler's address to the Congress of the Union of Wine Growers and Wine Merchants, *CTW*, 29 May 1907. He stated that the Colony produced 6,012,524 gallons of wine in 1891 and 5,665,960 gallons in 1905. However, he indicated that brandy had increased from 1,423,000 gallons to 1,530,473 over the same period.
[88] CPP, G30-1905: p 2 of the report. Despite demands for its abolition from the Bond, Merriman retained the excise although he reduced the rate to 3 shillings in December 1909. B. K. Ross, 'A Study of Politics in the Cape Colony from January 1908 to May 1910' (University of Cape Town, MA thesis, 1950), chapter 3.
[89] CA, PMO (Prime Minister's Office) 204, F871/05, Minute 1/222 dated 2 March 1905, from the deputy Prime Minister, Thomas Smartt. The government was negotiating with Milner for a reduction to pre-war levels. In June 1900 Milner had agreed to demands from the Randlords to ban the sale of liquor on the Rand in an effort to enhance profitability through employing a sober workforce. For details see C. Van Onselen, *Studies in the Social and Economic History of the Witwatersrand 1886-1914* (Harlow, 1982), vol. i, chapter 2.

the chairman of the Select Committee on the Sale of Liquor, Nicholas de Waal, reported that of the 79 courts, 63 severely limited opening hours, whilst in 50 districts restrictions were placed on the amount of alcohol that could legally be consumed on the premises.[90] In some areas there were many licensed establishments, whilst in others, where the temperance movement was influential, there were far fewer retail outlets.[91] Farmers criticised the so-called Innes Law (Act 28 of 1898), which forbade the sale of alcohol to the majority of African people who lacked the franchise. This statute had been introduced as a result of pressure from both the temperance lobby and from mining magnates and Eastern Cape farmers who wanted to employ an efficient, rather than an intoxicated, workforce.[92] In 1907 de Waal also complained that colonial wine was being ousted from licensed premises because of the tied house system. Licensed victuallers controlled sales and preferred to deal in imported wines, purported to be of a much higher quality.[93] By 1904 71.6 per cent of all wine and brandy sold had come from abroad.[94]

It was not just the quality of Cape wine and brandy that inspired criticism. The preparation of pastoral products for the market was also

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[90] CPP, A12-1907: Majority Report of the Select Committee on the Sale of Liquor.
[91] CPP, G30-1905: Report, pp 2-7. The Temperance Movement, which considered alcohol to be both a cause of poverty and morally degrading, constituted a relatively vociferous group in the early twentieth century Cape. It had close links with female political activism, for example, in the creation of the Women's Christian Temperance Movement in 1889; an organisation that also campaigned for female emancipation as a means of precipitating social change. Christian educated Africans also associated temperance with self-improvement, and newspapers such as *Izwi Labantu* and *Imvo Zabantsundu* supported prohibition as a means by which blacks could demonstrate their adoption of western concepts of civilisation, in the hope that this would enhance their future political, social and economic opportunities. See, for example, C. Walker, *The Women's Suffrage Movement in South Africa* (Cape Town, 1979) p 22; L. Bean and E. Van Heyningen (eds). *Letters of Jane Elizabeth Waterstone 1866-1905* (Cape Town, 1983) pp 203-205; A. Odendaal, 'African Political Mobilization', chapter 5.
[92] P. Scully 'Liquor and Labour in the Western Cape 1870-1900' in J. Crush and C. Ambler (ed). *Liquor and Labour in Southern Africa* (University of Natal Press, 1992)
[93] CPP, A12-1907: Majority report of N. F. De Waal.
[94] P. Scully, *Bouquet of Freedom*, conclusion.

a subject of censure. Farmers as well as buyers working in Port Elizabeth, London and the woollen towns of Yorkshire remarked that there was a growing deterioration in the Cape clip. In the 1890s some farmers began to inter-breed their merino sheep with the Vermont variety in order to increase the weight of the fleece. However, the consequence was a rougher, greasier staple, which brought producers much lower returns than that obtained by their competitors from Australia and New Zealand. Prices from Coleman Wool Exchange in London in 1905, for example, quoted 19½d to 34½d per pound for washed clip from Victoria, whilst New Zealand grease earned 8½d to 14½d.[95] The Cape meanwhile could only obtain 22d – 23 ½ d for scoured wool and 7d for grease.[96] Lower prices were attributed to a poor choice of breeds and indifference to the 'get up' of the final product. The Bradford Chamber of Commerce advised the Department of Agriculture in Bloemfontein as early as 1904 that 'farmers in South Africa are distinctly asked to keep clear of the Vermont strain'.[97] Three years later, the Port Elizabeth wool trader, A.E. Murrell, informed the Zwart Ruggens Farmers Association at Graaff Reinet that the overuse of the Vermont variety was still a major problem in the Eastern Cape. He also complained about the failure of sheep farmers to classify and grade their wools according to the nature of the clip. Fleeces were notably contaminated by burrs and impregnated with dung.[98] In Britain, S.B. Hollings, a reporter on the wool and mohair trade, articulated a much-published lament:

> For me to say that buyers are discontented with the South African produce that usually comes to market is but uttering a very commonplace complaint, for where we get

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[95] 'Australian Wool Prices', *CTW*, 7 March 1906.
[96] 'Lessons from Coleman Street', *CTW*, 17 January 1906
[97] C. Malleson *The Merino in South Africa: Breeding and Management* (Sydney, 1915). Malleson became a wool advisor to the South African Union Government.
[98] A.E. Murrell 'South African Wools: Their Production, Preparation and Sale', *AJCGH*, vol. 30 (February 1907), pp 205-215.

one clip that can be called creditable we get a dozen that are wanting in style, condition, length and general soundness of staple... I have no hesitation in saying that Cape pastoralists are the most backward of any sheep breeding country in the world, and that in point of turning out satisfactory wools South Africa occupies the lowest position.... I have seen Cape wool many a time when it was hard to tell which predominated – either earth, grease or wool – and when that is the case, the price made is bound to be very unsatisfactory.[99]

Mohair came up for similar criticism. Hollings wrote in 1901 that 'Cape Mohair is below the average point of quality when compared with Turkey'.[100] The wool was described as coarse in texture, and there were accusations that farmers fraudulently tried to deceive buyers by mixing kids with Cape 'firsts', in order to try to pass off the 'firsts' as the more valuable kid wools. By 1908, J. Daverin & Co., based in Port Elizabeth, reported that Turkish wool made 2½d per pound more than the Cape 'firsts' at the London wool exchange. This was also attributed to poor cross-breeding techniques and the failure to cull inferior stock. Unless farmers improved their animals, Daverin suggested, it would 'ultimately spell disaster for the Cape mohair industry'.[101]

The wool expert, Charles Malleson, attributed the better quality Australian wools to the fact that pastoralists there did not have to trek for better grazing land in times of drought or in seasons when the quality of the veld was poor. In the Cape transhumance prevailed in the arid north-west and the eastern Karoo. Trekking caused sheep to accumulate dust and dirt in their fleece and exposed them to insects which could potentially damage the wool or skin, such as the acari

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[99] S.B. Hollings, 'Improving the Staple', *CTW*, 2 March 1904.
[100] S.B. Hollings 'Cape Mohair,' *AJCGH*, vol. 18 (3 January 1901), p 20.
[101] J. Daverin & Co's reports, discussed in Editorial Notes, *AJCGH*, vol. 32 (February 1908), p 148.

mite which caused scab in small stock.[102] This custom, which was often criticised by progressive farmers, was indicative of the failure of farmers to provide adequate forage or ensilage to feed animals during dry seasons. Some producers, such as the commercial ostrich breeders from Oudtshoorn, had developed a system of rotational paddocking, which ensured birds could survive all but the severest of droughts. In these camps lucerne grass was planted under irrigation. This could be harvested to ensure birds could be fed all year round, thus providing the nutrients needed to maintain a quality plumage. However, the development of fodder crops was expensive and considerable investment was needed to carry out herbaceous trials. The eminent ostrich breeder, Arthur Douglass, estimated that it cost between £50 and £100 to develop an acre of lucerne, which would support up to five ostriches.[103] Consequently, trekking remained the norm and the methods of cultivating and storing fodder were often unknown, as the editor of the *Agricultural Journal,* Francis MacDermott, discovered when he visited the Queenstown District, in the Eastern Cape in 1904: 'Ensilage and silo is more or less a curiosity in most districts.....The making of hay is another phase entirely neglected while the planting of selected grasses to increase the values of pasturage is only heard of as an experiment'.[104] The lack of a fodder industry also thwarted pastoral diversification. The inability to feed cattle sufficiently all year round curtailed the development of dairying, ensuring that the Cape remained dependent on imported cheese, butter and condensed milk.

Problems associated with the marketing of produce were often attributed to the failure of farmers to establish co-operatives. These ventures could either serve to co-ordinate production methods, or

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[102] C. Malleson, *Merino Sheep in South Africa*, chapter 4.
[103] A. Douglass, 'Ostrich farming', *CTW,* 23 August 1905.
[104] 'Rural Cape Colony' , vol. 24 (January 1904), p 23.

alternatively, farmers could combine to organise their own distribution networks, thus reducing their reliance on middlemen. Attempts at the close of the nineteenth century to establish co-operative associations for the sale of agricultural products had been largely unsuccessful. In 1890 the Cape Town Wine and Export Syndicate had folded after only one year of operation.[105] Angora breeders, based in Graaff Reinet, had formed the Mohair Growers Association in 1896 to try to improve the prices received from merchants through ameliorating and standardising the quality of their product. Clips were to be carefully graded and it was hoped that buyers would pay more for the better fleeces. However, according to the farmer, E.R. Hobson, speaking in 1904, this organisation had failed because purchasers refused to co-operate and continued the traditional system of trading. Payment was not based on the quality of an individual clip. Instead a consignment was valued 'on the average'; an overall price being disbursed for a bundle of mixed wool regardless of quality. Hobson accused wool merchants of forming a 'ring' that conspired to reduce their own commercial costs by denying the farmer a fair price for his merchandise.[106] Improving agricultural profits was, therefore, seen as partly contingent upon the ability of farmers to reduce the power of traders to dictate terms.

Enzootic and epizootic diseases also restricted growth in the pastoral economy. William Robertson, the veterinary bacteriologist, claimed the Colony was 'cursed with all the stock diseases of Europe and a few special ones of our own'.[107] In the early years of the

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[105] In a symbolic union of industrial capital with agriculture the Bond leader, Jan Hofmeyr, and the mining magnates Cecil Rhodes and Barney Barnato set up this organisation to produce and market quality branded wine. However, this failed due to a lack of support from viticulturists. P. Scully, *Bouquet of Freedom*, chapter 3.
[106] CPP, A9-1904: Report of the Select Committee on the Angora Goat, evidence of E.R. Hobson, pp 28-32. A report of their last annual meeting was recorded in the *AJCGH*, vol. 22 (February 1903), pp 174-178.
[107] CPP, G23-1908: Report of the Chief Veterinary Surgeon, p 31.

twentieth century veterinarians were particularly involved in dealing with the cattle diseases designated as redwater, lungsickness (contagious pleuro-pneumonia) and lamziekte, as well as heartwater that killed merino sheep and angora goats, and the equine infection known as glanders. Some diseases such as rinderpest, redwater, lungsickness and quarter-evil could, by the twentieth century, be repressed by inoculation. However, the development of a vaccine for heartwater had failed, despite extensive research. This ailment threatened to halt an increase in ovine and capral yields due to the growing prevalence of the bont tick along the coastal areas of the Eastern Cape (chapters 2 and 3).

Many progressive farmers felt that a lack of financial resources endangered the future viability of their industry. A public outcry broke out, for instance, in response to rumours that the Bacteriological Laboratory in Grahamstown was to be shut down.[108] Farmers joined the Chief Veterinary Surgeons, Duncan Hutcheon and John Borthwick, in their attacks on the retrenchment policies of the post bellum governments. The number of specialist staff averaged about 16 in the first decade of the twentieth century.[109] Although this constituted a great increase on the pre-rinderpest days, many farmers complained about the paucity of available veterinary personnel. Low staffing levels meant heavy workloads and veterinarians complained that they lacked the time to devote to both research into indigenous diseases and the routine aspects of their profession. The annual

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[108] CA, PMO 204, F864/05. In May 1905 telegrams were sent to Jameson from W. P. Slater of the Upper Albany farmers Association, the Mayor of Grahamstown and Bathurst Farmers Association. The laboratory did remain open and was transferred to the veterinary department in July 1905.

[109] Figures taken from the colonial veterinary reports 1902-1909. Hutcheon headed the veterinary staff from his appointment in 1880 and Borthwick succeeded after Hutcheon's death in 1907. All the annual reports from 1902 contained complaints about the insufficient number of veterinary surgeons in the Colony. There were few private veterinarians in the Cape and the farming community was heavily dependent on state funded expertise.

reports indicated that only one veterinary surgeon, James Spreull, based in Somerset East, was consistently given the opportunity to carry out investigative research into vaccines for heartwater and bluetongue (chapter 2). In his first report as head of the Veterinary Department in 1907, Borthwick argued that a lack of specialists was discouraging farmers from investing in better stock:

> considering the largely increased capital invested in Livestock in this colony, I consider the time has now arrived when the Veterinary Staff should be established on a firmer basis to give investors in stock greater security. I feel confident that large tracts of grazing land at present unoccupied would be taken up and stocked if breeders were assured of competent veterinary advice and assistance.[110]

Lungsickness, which was the greatest bovine scourge in the Cape prior to the arrival of East Coast fever in 1911 was endemic in the Transkei and eastern districts. Borthwick's predecessor, Duncan Hutcheon, explained that this disease had been successfully eliminated from Europe by the culling of all infected herds. In the Cape, however, cultural and economic barriers meant that the methods used to deal with lungsickeness in Britain were not applicable. For such an eradication programme to be successful, culling would have to be reciprocated by adequate compensation; a financial liability the post bellum Cape governments could not afford to disburse. Hutcheon's alternative solution was to kill infected animals only, quarantine the farm and inoculate the remainder of the herd.[111] However, this was problematic especially in the Eastern Cape and the Transkei. Here some black farmers, who kept large herds on a commercial basis, were prepared to accept these methods of

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[110] CPP, G30-07: Report of the Chief Veterinary Surgeon, p 36.
[111] CPP, G57-1902: Report of the Colonial Veterinary Surgeon, pp 13-16.

prophylaxis,[112] but the majority, according to Hutcheon, were reluctant to kill stricken animals or to accept the inoculation of apparently healthy beasts, lest this be fatal.[113] The attempt by the Agriculture Minister, Arthur Fuller, to persuade chiefs and headmen to accept these procedures, enacted in the 1906 Animal Diseases Amendment Act, was largely abortive.[114] Cattle formed such an important function in African society that people were not prepared to risk the lives of their valued stock. Nor were they prepared to automatically slaughter sick animals as these could recover. In 1908 the Resident Magistrate at Elliot reported that only 3,000 out of a bovine population of 25,000 had been inoculated in that district. Many Africans, he suggested, were distrustful of the official agenda and saw inoculation as a government plot to annihilate their herds. [115] Culturally, therefore, veterinarians were faced with an alternative concept of disease and the nature and relevance of contagion and infection, which challenged western approaches to science and veterinary regulation.

Some settler farmers shared this scepticism of officialdom. Veterinary surgeons remonstrated that many pastoral producers would not dispense bonemeal to protect their animals against

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[112]CPP, Reports of the Transkei Territories General Council, (hereafter TTGC), Annual Meeting 1909, article on 'Lungsickness inoculation'. Bundy has suggested that some members of the Bunga had flocks of up to 3,000 sheep, which was comparable with many of the larger flocks held by capitalist stockbreeders outside the Transkei (*Rise and Fall*, chapter 4).

[113] CPP, Veterinary Reports: G57-1902, p 15. G41-1904, p 13. G31-1909, pp 25-26.

[114] CA, NA 691 (part 1), B2683: Resident Magistrate at Cofimvaba to the Secretary of the Native Affairs Department, 27 November 1906.

[115] CPP, G24-1908: Blue Books on Native Affairs, pp 26-27. This suspicion of veterinary medicine was not restricted to the case of lungsickness. Van Onselen ('Reactions to Rinderpest') and Phoofolo ('Epidemics and Revolutions') have argued in respect of rinderpest that Africans associated vaccines with a settler attempt to destroy their stock and force them onto the labour market. A similar response was expressed towards compulsory dipping against East Coast fever in the Transkei after Union; C. Bundy, 'We Don't Want Your rain, We Won't Dip: Popular Opposition, Collaboration and Social Control in the Anti-Dipping Movement c1908-1914', in W. Beinart and C. Bundy, *Hidden Struggles in Rural South Africa: Politics and Popular Movements in the Transkei and Eastern Cape 1890-1930* (Johannesburg, 1987).

lamziekte, which at that time was (incorrectly) assumed to be caused by a lack of phosphates in the soil, consequently leading to malnutrition, disease and potential death.[116] Similar complaints were made against those who failed to accept inoculation against redwater. This ailment, disseminated by the blue tick, was gradually extending westwards along the coast and had reached Mossel Bay by 1910. Veterinarians attempted to stop the disease in its tracks by vaccinating animals in advance of its spread. However, some farmers doubted the safety of the prescribed prophylaxis. Creating a stable redwater vaccine of standard or fixed virulence was particularly problematic in scientific terms and animals sometimes died as a result of being administered flawed doses.[117] Despite the potential for such accidents, the veterinary surgeon based in Knysna, J.A. Robinson, expressed contempt towards farmers who refused to take precautions to protect their stock:

> owners of cattle persistently decline to inoculate in advance of Redwater, preferring to wait till an outbreak occurs in their vicinity. The fact of the matter is, that in spite of countless repetitions of the knowledge we have gained respecting the disease and its method of extension, the pathology of Redwater is not grasped by the ordinary farmer, who, while convinced that ticks are in some way connected with it, still has a half belief and hope that when it disappears at the beginning of the winter, he has seen the last of it.[118]

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[116] CPP, G41-1904: pp 56-58. Although by 1930 *lamziekte* was proved to be a bacterial infection, in the 1900s it was widely believed to be a consequence of impoverished soils. It was discovered that introducing salt to the diet could ameliorate this condition, suggesting that dietary deficiency played a part in increasing susceptibility to the disease.

[117] D. Gilfoyle, 'Veterinary Science and Public Policy', chapter 6. Farmers received no compensation if their animals died. Although there was some interest amongst Eastern Cape farmers for the introduction of livestock insurance, this had yet to be devised. (CPP, G66-1906: Report of the Superintendent of Agricultural Co-operation, pp 28-33).

[118] CPP, G41-1904, p 69.

Such sentiments of disdain were also entertained by the Chief Inspector of Sheep, Allen Davison. Since 1894 legislation had been in place to make the eradication of scab, through the systematic dipping of small stock, compulsory. This law had been introduced due to pressure from commercial farmers in the Midlands and the Eastern Cape who had argued that scab not only undermined the health of animals, but also reduced the value of skins and clip. The 1892-1894 Scab Commission, chaired in its latter stages by Smartt, reported that the loss of production from scabby fleeces amounted to as much as 1½ d per pound.[119] This amounted to about one-third of the average value of an ovine pelt. For larger commercial producers, the continuing presence of scab was a threat to the profitability of their pastoral endeavours. However, for less prosperous farmers, the cost of dealing with the acari mite outstripped the benefits that could be gained from a purer fleece.

The intense opposition this statute aroused, especially amongst poorer and predominantly Afrikaner farmers, has been examined by Mordechai Tamarkin.[120] He has argued that their expression of discontent was sufficient to threaten the stability of the Rhodes-Bond government, and as a consequence, the law was made less stringent. From 1899 districts could elect their own scab inspectors, although the Transkei, remained under government supervision. The ability of these 'backveld' farmers to challenge both the rhetoric of the progressive lobby and the law, demonstrated that they were a powerful voice in the Colony, and in many respects, they undermined the confidence of succeeding governments to introduce mandatory legislation. The fact that Africans in the Transkei continued to be strictly monitored, despite their complaints about such discrimination,

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[119] CPP, G1-1894: Report of the Scab Disease Commission 1892-94, p 5.
[120] M. Tamarkin, *Cecil Rhodes and the Cape Afrikaners*, pp 200-210.

emphasised the fading voice of blacks in Cape politics.[121] It also indicated the increasingly incursive role played by the colonial state in regulating the life of African communities, which resonated with the enforcement of restrictions involving the utilization of silvatic resources in the Eastern Cape (chapter 5).

After the South African War, scab was as problematic a political issue amongst settler farmers as it had been a decade before. Hutcheon suggested that 'with the exception, perhaps, of stock theft, no subject had been so frequently discussed at farmers' meetings and in editorial columns as scab'.[122] Underlying the debate were issues concerning the demarcation of the powers of the state and its right to intervene in the daily running of a private farm. The question of whether legislation dealing with problems that affected whole communities, rather than just individuals, should be dealt with by compulsory or permissive measures formed the crux of this dilemma. In general, nineteenth century precedents had empowered Divisional Councils to decide whether the mandatory extirpation of scourges such as weeds should be enacted in a particular district (chapter 4). Regulations pertaining to scab were relatively unusual in that they encompassed obligation rather than volition.[123] This peculiarity contributed to the controversy surrounding this law. Thus in 1903

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[121] CPP, G24-1908: Report of the Chief Magistrate, Arthur Stanford, p 22. Also his evidence before the Select Committee on Native Affairs, CPP, A2-1909, pp 68-154.

[122] D. Hutcheon, 'Scab: Its Nature, Cause, Symptoms and Treatment', *AJCGH*, published posthumously in vol. 32 (April 1908), p 433.

[123] Local powers to deal with weeds, especially burrweed, were stipulated in the Divisional Council Amendment Act, no. 40 of 1889. Prior to the South African War, only the Veterinary Department had really succeeded in getting mandatory measures authorised. An Act 'For Preventing the Spread of Contagious and Infectious Diseases among Cattle and Other Animals' had been passed in 1881. It empowered Resident Magistrates to slaughter or isolate animals harbouring gazetted diseases and enabled the government to proclaim quarantine regulations in a given area, on the advice of the veterinary department. High fines were demanded of offenders. Act 27 of 1893 introduced measures to try to prevent the introduction of diseases from imported animals. The entomologist, C. P. Lounsbury, on the other hand, was unable to persuade Parliament to pass legislation dealing with noxious insects until 1904 (chapter 3).

Davison remonstrated that 'over seven years have elapsed since the Scab Act was made compulsory and yet there is still opposition of a more or less passive nature in many parts of the Country'.[124] He claimed people did not dip their animals sufficiently, kraals were not disinfected and remained sources of infection, and landlords abused their right to issue permits for the removal of stock, often giving infected animals a certificate of good health. In the north west farmers refused to dip, either though lack of water or because they believed the chemical solutions would cause the death of animals weakened by hunger. Then they trekked vast distances with their infected flocks, disseminated the disease into new areas. So long as people could elect their inspectors, Davison argued, scab could never be eradicated in areas where the Act was contested. He attacked the apathy of farmers who regarded the disease as 'an essential part of the life history of the sheep'.[125]

Politically, the resolutions passed by the high-profile conference convened by Arthur Fuller at Beaufort West in September 1904, laid the foundations for scab policy for the remainder of the decade.[126] Farmers who opposed interference from an increasingly centralising government dominated the proceedings. They attacked the Scab Acts on the basis that these regulations wasted the treasury £80,000 a year and created tensions between farmers and the state. Resolutions were passed demanding the rescinding of the scab laws and the abolition of all scab inspectors. It was not so much the idea of dipping that was

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[124] A. Davison, 'The Working of the Scab Act', *AJCGH*, vol. 23 (November 1903), p 559.

[125] CPP, G28-1904 p 2.

[126] The Conference was covered in many of the newspapers including the *CTW*, 21 September and 28 September 1904; the *EPH* 22 September 1904 and the *Midland News and Karroo Farmer* (hereafter *MNKF*), 21 September 1904. A memorandum by C. Currey (the Under-Secretary for Agriculture) dated 30 May 1905, noted that the Progressive Government had planned to introduce legislation, which would have replaced Scab Boards with government appointed inspectors. However, this idea was dropped after this conference. (CA, AGR 254,F22).

disputed, but rather the manner in which the legislation was enacted. Locally elected farmers rather than the Chief Inspector of Sheep, a leading spokesmen Pony De Wet insisted, should decide on the appropriate policy for a particular region. The introduction of regulations to benefit commercial producers had not taken into account the economic needs of pastoralists in the poorer districts of the Colony. These adamant conclusions were re-iterated in future deputations to parliament.[127] Some members of the Progressive Ministry, in particular Smartt, wanted more intrusive laws to be introduced. However, the Party's tenuous majority in parliament and its own divisions over the issue, precluded the introduction of legislation that would have incorporated a higher level of state supervision and crippling fines to promote compliance. The failure of the 'compulsionists' to dominate the political agenda indicated underlying weaknesses in the identity of the Cape State, which still lacked the assurance to deal with potentially widespread rural opposition. As a consequence, in 1909 a frustrated Davison complained that the economic success of wool and mohair production was continuously thwarted by the many farmers who in their ignorance 'still adhere to the belief that nature will cure scab'.[128]

Prevailing nescience of modern farming methods also formed part of a critique of African farming. In many respects the problems that hampered development on settler farms were mirrored, often with greater intensity, in the locations and reserves of the Eastern Cape where most of the Colony's African population resided. Many African critics had been educated by Christian missionaries and had been taught western methods of farming, together with a Protestant work

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[127] For example, the deputation led by G. Van der Merwe from Calvinia, *CTW*, 20 June 1906.
[128] CPP, G31-1909, p 44.

ethic, at the mission stations.[129] Alan Kirkland Soga, the editor of *Izwi Labantu,* for example, insisted that the farmer must adopt 'the newer more modern and up to date scientific systems which are absolutely necessary if he is to exist on the soil and the soil is to carry his stock and produce without deterioration and ultimate impoverishment'.[130] Others, such as Davidson Don Tengo Jabavu internalised the colonial rhetoric, which portrayed black farmers as a predominantly primitive people, indolent and dissipative of telluric resources. Jabavu attacked the social division of labour in which women still hoed the fields, whilst the men sat idle. Too many people were merely content with subsistence production, he claimed: 'They are satisfied to live from hand to mouth. If the crops are sufficient to carry them to the following season, then they reckon all is well'.[131] Jabavu described the fields of crops as un-rotated, un-manured, overgrown with weeds, tilled with primitive tools, untouched by ploughs and trampled upon by hungry stock, unrestrained by fencing. In his view all these factors demonstrated 'haphazard and wasteful methods of cultivation'.[132] He was also critical of the overstocking of the commonages, and the fact that people went to the mines to earn money to procure yet more cattle, which destroyed the limited grass cover.

Yet Jabavu's critique was also an indictment of the policies, as well as the neglect, meted out on African people by the colonial government. Increasingly Africans were being denied access to a viable amount of land. Anti-squatting laws, known as Location Acts,

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[129] For example: C. Higgs, *The Ghost of Equality: The Public Lives of D.D.T. Jabavu of South Africa 1885-1959* (Ohio University Press, 1997); A. Odendaal, 'African Political Mobilisation', chapters 1, 2 and 5.

[130] 'Natives and Agriculture', *Izwi Labantu,* 9 April 1907. A.K. Soga was the son of the first African Presbyterian Missionary in South Africa Tiyo Soga. *Izwi Labantu,* was one of the first African newspapers in the Cape, initially financed by Rhodes in the late 1890s, in order to try to persuade black voters to support the Progressive Party.

[131] D.D.T. Jabavu, 'Natives and Agriculture', from his book *The Black Problem* (Lovedale, 1920), p 104.

had been in theoretical operation since 1869 and empowered officials to evict blacks form land owned by white farmers, unless the latter were prepared to pay a licence fee to retain their residence.[133] With the gradual intensification of pastoral production, some white commercial farmers wanted to terminate rental or sharecropping agreements and oust squatters, both black and white, from their properties. This, together with an increase in population, exacerbated overcrowding in the reserves.[134] Acreage of land per homestead was in decline, and with it, the ability to sustain an independent rural existence.[135] Overcropping and overstocking exacerbated the problems of erosion in a fragile ecological environment (chapter 4).

The priority of the Cape State, by the twentieth century, was to facilitate the development of white commercial agriculture in an effort to attain self-sufficiency. Many settler farmers feared competition from African producers and their control of the political processes ensured the allocation of funds and expertise favoured their interests. Charles George Lee, the President of the Inter-colonial Agricultural Union, told his audience in 1908 that: 'the time will come when the European of this country will be seriously taxed to hold his own against the increasing competition of the native producer'. [136] The greatest threat to white prosperity and domination in Lee's view was 'neglect, not to say contempt, of advanced methods of farming.'[137] The adoption of progressive agricultural methods was thus associated not only with increasing national wealth, but also with the maintenance of white political power in South Africa. Significantly, Lee's attitude

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[132] Ibid., p 102.
[133] For details of these, see C. Bundy, *Rise and Fall*, chapters 3 and 4.
[134] The total African population in the Cape rose from 1,424,787 in 1904 to 1,982,588 in 1911, representing a 39 per cent increase. Figures taken from the Cape Census G19-1905, p xxiii-xxiv and the first Union Census, UG32-1912, p x.
[135] By 1920, D.D.T. Jabavu estimated an average family had 4-6 acres.
[136] 'Fourth Congress of the Intercolonial Agricultural Union', *AJCGH*, vol. 33 (December 1908), p 763.
[137] Ibid., p 764.

highlighted some of the complexities and contradictions facing Cape governments in determining their agricultural agendas. Despite the demands of white farmers, African land holdings also had to be rendered ecologically sustainable and agriculturally productive if they were to function as the prescribed labour reserves. Thus the state had to provide a measure of expertise, for example, in the form of veterinary services, which could benefit both African and settler producers. Unlike other districts of the Colony, East Griqualand and the Transkei obtained additional scientific skills, as the number of specialists increased from one fully qualified veterinarian in 1904 to three by 1907.[138] This was particularly important for all stockbreeders in a region that was particularly vulnerable to the threat of East Coast fever; a cattle disease already rampant in neighbouring Natal.[139] Thus the interests of black and white farmers were not necessarily mutually exclusive.

(1.3) The Protagonists of Progress

Progressive farmers were motivated by a shared desire to increase capitalist production and re-invest accumulated profits in the land. Ideologically there existed no single, homogenous model for development. Notions of progress were expressed by Africans, Afrikaners and anglophones, by the Progressive and South African Parties, as well as by the Bunga. What united them was their willingness to listen to new ideas, to adopt scientific methods of

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[138] CPP, G41-1904, pp 1-2 and G23-1908, pp 17-29.

[139] P. Cranefield, *Science and Empire: East Coast Fever in Rhodesia and the Transvaal* (Cambridge, 1991). The disease did not reach the Cape until 1911. In the meantime East Coast fever was the subject of two select committees in 1908 and 1909. The final reports recommended an inter-colonial approach to tackling the disease, the erection/maintenance of fences along the Cape-Natal and Bechuanaland-Transvaal borders, and strict controls on the movement of stock. CPP, A2-1908 and A7-1909.

farming and, to some extent, to witness an increase in the centralising powers of the colonial state.

The economic importance of pastoral production had encouraged the creation of an agricultural bureaucracy from the introduction of responsible government in December 1872. By 1876 the Colony had its first official veterinarian to investigate and advise on livestock issues. Eleven years later an Agriculture Department was formed and the number of scientific personnel attached to it gradually increased during the 1890s. By 1899 the state employed 16 veterinary surgeons, two entomologists and a marine biologist. After the South African War, an agricultural assistant, a viticultural expert and a superintendent of co-operation joined them. Such appointments were made with the support of progressive farmers and publicised by the organisations that furthered their interests.

The first political party to represent the concerns of agriculturists was the Afrikaner Bond, formally constituted in 1883 in response to the introduction of an excise by Gordon Sprigg's government in 1878 and the failure of this ministry to solve the economic crisis resulting from phylloxera. Effective campaigning resulted in the removal of this tariff in 1886.[140] The success of this group and their domination of Cape politics, especially during the Rhodes's Ministries (1890-96), persuaded anglophone farmers to create their own political organisations. In 1883 Eastern Cape farmers had founded the Central Association (Farmers' Congress) to co-ordinate the work of local agricultural societies. This group formed the nucleus of the Progressive Party from 1893.[141] Thus from the

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[140] P. Scully, *Bouquet of Freedom*, chapter 3. See also T. Davenport, *The Afrikaner Bond*.

[141] Y. Sank, 'The Origins and Development of the Cape Progressive Party', chapters 1 and 2.

start, agricultural interests formed a raison d'être of this political grouping.

Using the example of Graaff Reinet, Kenneth Smith has highlighted the racial tensions that existed between anglophone and Afrikaner settlers, which consequently prevented the creation of joint farmers' associations. Insecure because they constituted a white ethnic minority, anglophone farmers tended to be more willing to accept closer ties with the British Empire than their Dutch speaking neighbours. Many Afrikaners, meanwhile, were suspicious of imperial motives, especially in the wake of the Jameson Raid and the two South African Wars, and wanted political developments in southern Africa to be orchestrated at the periphery, rather than in Whitehall.[142] Local divisions were, to some extent, replicated in the ideology that separated the Progressive Party from their South African Party counterparts. The former tending to incorporate anglophone farmers from the Eastern Cape, whilst the latter attracted Afrikaners and anglophone agriculturists who shared this concern about British intentions. Ideologically, however, their agricultural agendas were very similar. Both parties were committed to increasing exports and moving towards self-sufficiency. In the 1904 election campaign, candidates, regardless of their allegiances, advocated greater co-operation between all white farmers, regardless of ethnicity, as well as developments in irrigation, education, scientific husbandry and legislation to deal with issues such as stock diseases, weeds and vermin.[143] The South African Party candidate, John Marais, informed the Stellenbosch electorate that 'he had gone through the Progressive

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[142] K. W. Smith, *The History of Graaff Reinet 1786-1910* (Grahamstown, 1976), chapters, 12-14. F. Van Jaarsveld, *The Awakening of Afrikaner Nationalism 1868-1881*(Cape Town, 1961).

[143] Speeches made by Progressive candidates were published in greatest detail by the *Cape Times* and the *Cape Argus*. The *South African News* and *Ons Land* supported the South African Party.

programme, and he had found nothing in it that his party could not subscribe to'.[144]

Neither was there a great deal of difference in the resolutions introduced by the diverse farmers unions, which held separate annual conferences, at which their demands were recorded and presented to government. Farmers' Congress represented primarily anglophone stockbreeders in the Midlands and the Eastern Cape. Their debates were characterised by frequent requests for more stringent scab legislation, harsh punishments against those found guilty of stock theft, loans for irrigation and jackal proof fencing, the setting up of experiment stations, prohibition on the sale of alcohol to blacks and, in the latter years, game protection. Some Eastern Cape farmers attended the Agricultural Union, which articulated a similar agenda with regard to the pastoral sector. What was distinctive, however, was that the Agricultural Union also included Afrikaner farmers from the Western Cape. Demands for the abolition of the excise and the termination, rather than the continuation, of black prohibition reflected the interests of the viticultural sector.[145] The Afrikaner Bond's annual resolutions resonated with those of the Agricultural Union, with one notable exception: they insisted that all scab inspectors should be elected by farmers, and that discretion should be adopted when dealing with pastoralists in the poorer areas such as Namaqualand.[146] The Bond therefore remained more sceptical than the anglophone dominated associations about the desirability of augmenting the authority of central government. Nevertheless, a common objective of promoting rural development did help to assuage some of the ethnic divisions. The gradual increase in co-operative ventures, such as the National Wool, Mohair and Ostrich Feather

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[144] 'John Marais in Stellenbosch', *SANW*, 17 January 1904.
[145] Details of all these conferences were published annually in the *AJCGH*.
[146] For example: 1904 Bond conference in Stellenbosch, *SANW*, 9 March 1904.

Association, set up in 1906, brought together both anglophone and Afrikaner fibre export producers who wished to improve their marketing strategies (chapter 2). Closer links were also forged with agriculturists in neighbouring colonies. From 1905 farmers from all four regions of the future Union met at an annual inter-colonial conference to discuss mutual grievances and initiatives.[147]

On the Parliamentary benches, Progressive Party commentators included Louis Abrahamson, Charles Kohler, Walter Rubidge and Thomas Smartt. Abrahamson became a driving force in the co-operative movement, establishing both a winery and creamery on that basis in Wellington (chapter 2). Kohler shared this collective ethos and ultimately launched the *Ko-operatieve Wynbouwers Vereniging* in 1918.[148] Smartt's syndicate, based in Britstown, had invested in major irrigation works and sought to prove that viable arable and pastoral production were possible in the dry wastelands of the north (chapter 4). Of all the Progressive representatives, Walter Rubidge appeared the most rhetorically expansive. An exceptionally successful angora and merino stockbreeder, he owned three farms in the districts of Graaff Reinet, Aberdeen and Vryburg. On his election to the constituency of Vryburg in 1904, Rubidge sat or gave evidence at over ten select committees on various agricultural issues.[149] He also led debates at meetings of the Agricultural Union and Graaff Reinet's Zwart Ruggens Farmers Association. Rubidge was particularly notable for his adamantly statist approach towards the prerequisites for agricultural growth. He was a fervent believer in stringent scab acts,

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[147] Details of the first conference can be found in *AJCGH,* vol. 27 (December 1905).
[148] A. Joelson, *Memoirs of Kohler,* chapters 12 and 13 deal with the setting up of this co-operative. Kohler had originally been a member of the Bond but had defected to the Progressive camp in support of the Jameson Raid. He was the Member of the Legislative Council for the Western Province.
[149] W. Rubidge owned three farms in Graaff Reinet, Aberdeen and Vryburg. He participated in select committees dealing with irrigation, jackal destruction, scab laws, re-organisation of the agricultural department, Elsenburg and crown forests.

the compulsory slaughter of lungsick cattle as well as jackal and weed extirpation. He called upon politicians and farmers to support statutory regulation as the only means by which these measures could be effectively enforced.[150] As a prize stockbreeder, Rubidge sought to ameliorate pastoral production through the compilation of a stud book and the development of a fodder industry.[151] Rubidge also considered irrigation to be crucial for development: 'I am still damming, I maintain to this day if you want to save Africa you must dam it', being one of his most memorable statements.[152]

Some of Rubidge's views resonated with those of an individual, lauded as 'one of the most progressive of farmers and politicians', Hercules van Heerden, the South African Party representative for Cradock.[153] Based on his experiences at his farm of Schaap Kraal in Tarkastad, he too saw irrigation as essential for prosperity and believed that the state should take the initiative in this endeavour. 'In the erection of small works was the salvation of the country' he stated, in relation to this issue.[154] However, unlike Rubidge, Van Heerden contested the increasingly interventionist role of central government, and believed that local communities should draw up their own regulations to deal with problems such as scab.[155] Van Heerden's progressively minded party colleagues, included the viticulturist from Worcester, Dirk de Vos Rabie who supported a co-operative approach to both irrigation and wine production (chapter 4) and Paul Michau, President of the Wool, Mohair and Ostrich Feather Association

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[150] For example, his evidence before the Select Committee on the Agricultural Department, CPP, C1-1904 and the debate on the Animal Disease Bill, *CH*, 4 July 1906.
[151] 'The Fodder Industry', *SANW*, 8 August 1906.
[152] 'Zwart Ruggens Annual Meeting', *EPH*, 30 January 1904.
[153] 'Real Progress', *SANW*, 1 June 1904.
[154] 'Bond Congress at Ceres', *CTW*, 21 March 1906.
[155] CPP, C1-1904: Evidence of H. Van Heerden, pp 67-74.

(chapter 2).[156] To these can be added commercial farmers who did not stand for parliament. In particular, Charles G. Lee, the organiser of the *South African Stud Book* and President of both the Agricultural and the Inter-colonial Unions, the ostrich breeder Oscar Evans, the irrigation enthusiast William Southey, as well as Percy Malleson and Harry Pickstone, managers of the Cape Orchard Company and the Rhodes Fruit Farms respectively.

Individual farmers entertained their own hierarchies of agricultural priorities and development strategies, reflecting the ideological fragmentation and complexity of progressivism. Debates on the Scab Act, for instance, indicated that even within each party alignment there was a considerable divergence of opinion. Whereas Smartt and Rubidge wanted repressive legislation, Bernard Niland, an Eastern Cape stock farmer and Progressive representative for Fort Beaufort, held comparatively moderate views on the Scab Acts. He saw no reason for abolishing Scab Boards and replacing them with government inspectors. He was also sympathetic towards the arguments of people from the north-western Cape. Niland believed the laws had failed 'because we have not had the hearty co-operation of the men principally concerned – that is the farmers'.[157] His views were much more in line with those of Van Heerden and the Afrikaner Bond, than with those articulated by many Progressives. Niland's position suggested that ethnic attitudes to scab legislation were more complex than has been postulated by Tamarkin. The self-publicised grandson of an 1820 settler, Niland symbolised the fact that the preservation of local autonomy could be an issue for the anglophone as well as the Afrikaner community. Progressivism was thus

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[156] Member of the Legislative Council for the North Eastern Circuit and Assistant Treasurer of the Bond from 1905.
[157] CPP, C1-1904: Evidence of B. Niland, pp 28-35.

problematic both in terms of its definition and the specifics of its agenda.

Self-professed modernisers contrasted themselves with those they chose to define as 'regressive'. 'The progressive farmer is always hampered by his unprogressive neighbour',[158] was a frequent refrain in both the *Agricultural Journal* and the press. William Southey, for instance, suggested that the high price of meat could not be attributed to the action of the cold storage companies, but was purely a consequence of the fact that supply failed to meet demand, simply because many farmers were lazy. 'Regressive' producers, he contended, did nothing to try to improve agriculture. Avaricious, they would not defray the cost of sheep dips nor would they destroy jackals unless the government was prepared to offer generous bounties. They took no interest in modern husbandry, were indifferent to irrigation and fatalistic about low yields. Southey accused Cape farmers of being enveloped in a web of self-pity, continuously wallowing in the notion that they were forced to endure greater environmental adversity than anybody else in the world. Progress could only occur, he concluded, if all farmers ceased to grumble and began to make the best use of their land.[159] A cultural divide was thus being created between those who self-consciously saw themselves as progressive, and those whose farming practices allegedly impeded rural development.

Africans also engaged in a debate as to how agriculture could be made to flourish. The annual meetings of the Bunga provided a forum for discussing a range of issues such as tackling bovine diseases, overgrazing, improving stock breeds, conserving forests, developing irrigation and the setting up of agricultural schools and credit

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158 Anon, 'A Farmer's Growl', *CTW*, 12 January 1904.
159 W. Southey, 'Meat Duties', *CTW*, 31 May 1905.

banks.[160] According to Colin Bundy, the Bunga consisted of 'a class of headmen-bureaucrat farmers', who were essentially progressive in outlook and were prepared to criticise African traditions such as overstocking and overgrazing.[161] Although, historians, such as Bundy and Stanley Trapido, have argued that opportunities for Africans to become successful commercial farmers were rapidly being eroded (introduction), there were still occasions when the accumulation of resources was possible, such as during the South African War.[162] The Blue Books, the South African Native Affairs Commission (1903-1905) and surveys carried out in 1908 and 1909 all described incidences of new ventures in black commercial production. In 1908 a commission reported that: 'The largely increased scope afforded to industrious Natives during the war to amass wealth enabled a number of them to acquire land in exchange for their savings'.[163] According to William Seti, Africans residing in the vicinity of King Williams Town 'are doing very well, and in fact, they support the product market of the town'.[164] Robert Joseph, a Christian Mfengu farmer, advised his interlocutors in 1909, that he owned 2,163 morgen of land near Butterworth; a property comparable in size to that of many white capitalist farmers in the Eastern Cape. He employed wage labourers, rather than being dependent on the productive capacity of his family members, recruited his own transport riders and had started to produce superior quality German Mealies for the internal market. He strongly advocated compulsory dipping, the

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[160] These issues were debated in the Bunga meetings of 1904, 1906 and 1909.
[161] C. Bundy, *Rise and Fall*, p 128.
[162] P. Warwick, *Black People and the South African War 1899-1902* (Cambridge, 1983); W.R. Nasson, 'Moving Lord Kitchener: Black Military Transport and Supply Work in the South African War, 1899-1902, with particular reference to Cape Colony', *JSAS*, vol. 11, 1 (1984).
[163] CPP, G46-1908: Report of the Departmental Commission on Occupation of Land by Natives in Unreserved Areas, p 13.
[164] *SANAC*: Evidence of William Seti, volume ii, p 592. Seti worked both as a farmer and local civil servant. Like many of the more prosperous black farmers he was Mfengu and Christian, educated at Lovedale.

need for a scientific approach to agriculture and a proper education for all.[165] African progressives also formed their own agricultural associations to exchange ideas and competed successfully with white farmers at agricultural shows.[166]

(1.4) Conclusion

In the first decade of the twentieth century a large number of select committees and commissions were convened in order to appraise the problems that impeded the optimal development of the rural economy. Analysts put forward a variety of explanations. Natural causes such as climate, the spread of injurious insects and fungi as well as a plethora of animal diseases were seen to threaten both the arable and the pastoral sectors of the economy. Obstacles to development were also attributed to structural and organisational problems such as a shortage of capital, rural indebtedness, poor marketing strategies, an inadequate labour supply and insufficient scientific expertise. A neglect of modern technology, the absence of experimental stations, the paucity of agricultural education and a widespread ignorance of crop rotation and the use of fertilisers ensured that old-fashioned methods of husbandry remained entrenched. Yet progressive farmers were not always united in their solutions to these problems, nor were they necessarily successful in meeting their objectives. Their debates and initiatives form the focus of the remaining chapters of this thesis.

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[165] CPP, A2-1909: Evidence of R. Joseph, pp 245-258.
[166] CPP, G36-1907: Blue Book on Native Affairs: Reports of the Resident Magistrates from Butterworth and St. Marks, p 137-8 and 59. See also, A. Odendaal, 'African Political Mobilisation'.

CHAPTER II

The Reconstruction of the Rural Economy: Progressivism, Science and A Collective Approach to Agricultural Development in the Cape circa 1902-1908

In the aftermath of the South African War a variety of strategies were adopted by governments, farmers and scientists in an attempt to tackle the problems contemporaries perceived as undermining rural productivity. Progressivism was very much associated with notions of 'national efficiency' and this was demonstrated, in the Cape context, through the efforts of Jameson's ministry to improve the administrative structures of colonial government, including the functioning of the Agriculture Department. Initiatives were also taken by farmers and the state to promote a more co-operative, and less individualistic, approach to rural production. Quality controls and better marketing strategies went hand in hand with efforts to acquire scientific knowledge as the basis for more effective and objective agricultural planning and investment. Due to the paucity of alternative academic institutions, scientists working for the Department of Agriculture made important contributions not only to the amelioration of rural production, but also to the intellectual and cultural life of the Colony. The arable sector attained more official attention than it had in previous decades with the appointment of Eric Nobbs as agricultural assistant in 1902 and, to a lesser extent, with the recruitment of a government viticulturist, Raymond Dubois, the

following year.[1] Scientific surveys also underpinned the state's contribution to the development of a demersal (deep sea) fishing industry, based on commercial trawling, in a bid to provide a viable meat substitute for the local economy, as well as a product for an export market. This chapters concentrates predominantly on agricultural reconstruction pertaining to the settler economy, on which the rhetoric, expertise and resources were largely focused. However, it will conclude by exploring the concurrent discussions and initiatives that emanated from the Transkei Territories General Council, which demonstrated that the African élite was also influenced by wider debates on rural efficiency and enhanced productivity.

(2.1) Agriculture and the Quest for Bureaucratic Efficiency

Whilst Milner was developing an Agriculture Department in the Transvaal and the Orange River Colony, the Cape initiated investigations into the workings of its own administrative structures that had provided the model for developments in the neighbouring states. On attaining power in 1904, the Progressive Government began an assessment of the workings of the bureaucracy with a 'view of effecting economy in administration without loss of efficiency'.[2] J. S. Meeston, one time financial advisor to the government of the United Provinces of India, was recruited as a consultant. All branches of the administration were examined in terms of operations, liaison between departments, the requisite staffing qualifications and suitable levels of

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[1] CA, AGR 485, C7. CPP, G47-1906 pp 14-15 and CPP, G30-1907 pp 18-19: Reports of the Director of Agriculture. Dubois was recruited in September 1903, having had experience of wine production in both Algeria and Australia. He was dismissed by the Director of Agriculture in May 1905 on the basis of mismanagement at the government wine farm, Groot Constantia, and allegations that he applied unacceptable additives to high quality government wine intended for public sale. He was not immediately replaced due to the economic depression, which encouraged policies of fiscal retrenchment.

emolument.[3] Ten commissions of enquiry were convened and their findings were published between 27 September 1904 and 14 May 1906. The first, eighth and ninth reports dealt with the Treasury and recommended tighter controls over auditing. Public works and railways were covered in the second and third surveys respectively. The sixth and seventh reports suggested that there was a need for greater expertise within the civil service and a more effective grading system. Milton Siepman has briefly discussed the work of these commissions and was generally critical of Jameson's government for having ideas but failing to act upon them as a result of the Ministry's tenuous majority. No general civil service reform bill was introduced despite these enquiries and the public service, Siepman contended, remained poorly organised and inefficient.[4]

Yet in relation to the Department of Agriculture reforms were put into place indicating that farming was a key concern of both the Progressive Government and rural politicians in general. In 1904 and 1905 agriculture was the subject of a select committee and two commissions of enquiry. To the select committee were invited government experts who expressed a number of concerns about the functioning of the civil service. Colin McNaughton, the Midlands Conservator, claimed: 'There is no organisation in the Forest Department as a department'.[5] His colleague, the Western Conservator, Ernest Hutchins, agreed and suggested the appointment of a chief conservator together with the establishment of a school of

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[2] CA, PMO 190, F3/05: R. Sothern Holland (Jameson's secretary) to Thomas Graham (MLC and Chairman of the Public Service Commissions), 4 June 1904.
[3] Ibid. From the 1850s the Indian Civil Service had been gradually transformed into an administration staffed by educated and examined personnel. At the turn of the twentieth century the bureaucratic structures in India were also being modernised by the Viceroy, George Curzon.
[4] M.R. Siepman, 'An Analytical Survey', pp 193-197.
[5] CPP, C1a-1904: Final Report of the Select Committee on the Agricultural Department, p 51.

forestry.[6] These opinions were recorded in the final report and formed the basis of subsequent reforms in the Forestry Department (chapter 5). Both the entomologist, Charles Lounsbury, and the agricultural assistant, Eric Nobbs, recommended the creation of experiment stations on the American model in order to provide advice on agricultural procedures, based on local rather than foreign knowledge and experience.[7] This too was carried out to a limited extent (below).

Where advisors were unable to get their way, primarily as a consequence of fiscal retrenchment, was in the recruitment of more staff. Duncan Hutcheon complained about the lack of veterinarians in the country; there were only 16 and the Colony needed 30. Hutcheon dismissed ideas that 'practical farmers' should be trained to do veterinary work; veterinarians needed proper scientific qualifications, he argued. Hutcheon's position was indicative of the growing exclusivity of colonial science on the part of its trained practitioners and reflected the widening rift between professional and popular expertise. Lounsbury concurred and insisted that the country needed a mycologist to research fungal diseases, such as fusicaladium, which affected apple and pear trees. This was particularly important in view of the fact that the government was trying to promote the fruit industry at this time (below). At present Lounsbury was carrying out investigations himself, but he did not feel qualified to do so as plant pathology fell outside the remit of an entomologist.[8] Government

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[6] Ibid.: Evidence of D.E. Hutchins, pp 79-91.

[7] Ibid.: Evidence of C. Lounsbury, pp 13-32 and E. Nobbs 143-148.

[8] Lounsbury was supported in his requests for an entomologist by both the Western and Eastern Boards of Horticulture as well as by the Director of Agriculture, Duncan Hutcheon. Percy Malleson of the Cape Orchard Company argued that 50 per cent of fruit crops were lost due to fungus, *AJCGH*, vol. 24 (April 1904), p 503. D. Hutcheon, 'Why a Mycologist is needed', published posthumously in *AJCGH*, vol. 31 (August 1907). In his report of 1906 Lounsbury complained that fusicaladium was taking up too much of his time and he was unqualified to deal with it (G30-1907). The following year he expressed frustration that he had had to appeal to the Transvaal to obtain the part-time services of their mycologist, I. Pole Evans, to identify *Plasmopara viticola* (a grape fungus), G23-1908 and G31-1909.

scientists were thus self-consciously promoting themselves as well as the credibility of their work on the basis of their specific knowledge. Agricultural science was becoming far more specialised, but unfortunately for the Cape, financial exigencies forestalled the recruitment of a variety of additional expertise.

Both the Commission convened to look at the Agriculture Department (1904) and the Fifth Report of the Public Service Commission (1905), recommended the appointment of a Director of Agriculture to oversee the work of the whole department, allocate budgets and encourage a collaborative approach to rural planning. This was enacted with the creation of this position in 1905, the first incumbent being the long-serving veterinary surgeon, Duncan Hutcheon. The 1904 proposals also suggested a reduction in the red tape surrounding applications for irrigation and fencing loans, both of which were carried out (chapters 4 and 6). These responses indicated that the Progressive Government was amenable to proposals for change and regarded centralisation of the Department as a key feature of an administrative efficiency drive.

(2.2) Science Agriculture and the State

Scientific investigations and technological applications were vital for the development of modern farming. This section concentrates on three key aspects of state sponsored research during the post bellum period: veterinary science, experimental cropping as well as ichthyological surveys of the surrounding oceans. Scientist attached to the Department of Agriculture also made considerable contributions to the intellectual culture of the Colony. John Gilchrist, the Marine Biologist, was President of the South African Philosophical Society

from 1898 until 1905 and was also a founding member of the South African Association for the Advancement of Science set up in 1901.[9]

The visit of the British Association for the Advancement of Science to southern Africa in 1905, as Saul Dubow has shown, was an important way in which colonial scientists attained imperial recognition for their work.[10] During this tour, scientists employed by the state delivered numerous lectures. Their presentations highlighted the primary position enjoyed by agriculture as a topic of empirical investigation in the Colony. Lectures included a survey of indigenous forests in South Africa, the Cape's contribution to marine biology, an analysis of geological and pedological discoveries, entomological experiments on ticks together with a discussion on enzootic and epizootic diseases.[11] The publicity that government scientists attained from this high profile visit helped to legitimise the value of their efforts. It also reflected Roy MacLeod's paradigm of the 'Moving Metropolis'. Responding to scientific problems pertaining to the Cape's own specific environment, the colonial periphery was now accepted as an instigator of scientific research, equal, as opposed to inferior in substance, to that which was being produced at the imperial centre.[12]

The appointment of William Branford, the first official veterinarian in the Cape, in 1876 marked an innovative step in the development of the colonial bureaucracy.[13] The inception of a Veterinary Department highlighted the importance of the pastoral economy, and illustrated the fact that the introduction of scientific measures to improve stock production was a priority of influential

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[9] S. Dubow, 'A Commonwealth of Science: the British Association in South Africa in 1905 and 1929', in S. Dubow (ed).*Science and Society.*
[10] Ibid.
[11] Details of the different papers were reported as the 'British Association Tour', in *CT,* 18 and 19 August 1905.
[12] R. MacLeod, 'On Visiting the Moving Metropolis': Reflections on the Architecture of Imperial Science', *Historical Records of Australian Science,* vol. 5, 3 (1982).
[13] W. Beinart, 'Vets, Viruses and Environmentalism'.

farmers and politicians. Over the course of the next 30 years veterinary knowledge altered considerably, making this an interesting time in the history of colonial science. For Branford disease was very much associated with environmental factors such as the presence of marshes that hosted flukes, the attributive cause of many diseases at that time. In the 1880s Branford's successor, Duncan Hutcheon, introduced a more microscopic approach to veterinary investigation, based on European discoveries that germs caused many diseases.[14] By the 1890s the role insects such as ticks and mosquitoes played in spreading infection had been revealed, leading to specific entomological research into the life cycle and control of arthropods that threatened the success of the Cape's livestock economy (chapter 3). Nonetheless, environmental factors never ceased to be considered as a facilitator of infection. In 1905 Hutcheon attributed the prevalence of a variety of stock diseases in the Colony to three specific ecological causes: the lack of rotational grazing which ensured the veld was impregnated with parasites, the presence of stagnant drinking water which encouraged the proliferation of liver flukes and the climatic conditions that enabled the fluorescence of ticks.[15]

The scientific investigations carried out by veterinary scientists in the aftermath of the South African War focused on analysing both environmental and microbial contributors to disease. Apart from liaising with Lounsbury in his research into vectors and a variety of chemical and ecological forms of prophylaxis, veterinarians specifically explored the development of vaccines, a line of investigation that had commenced in the Cape in the 1890s. Their work also involved testing the experiments of individual farmers who concurrently carried out their own trials on prophylactic and curative measures to protect their

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[14] Ibid.

[15] D. Hutcheon, 'Diseases of Livestock in South Africa'. Lecture presented to the British Association and reported in the *CT*, 18 August 1905.

stock. At times this led to tensions between qualified veterinary surgeons and local farmers over the provenance and credibility of science. Convinced that they knew more about pastoral husbandry than foreign veterinarians, some farmers were not prepared to readily endorse procedures advocated by official scientists. This attitude was replicated in other fields of agricultural practice such as irrigation (chapter 4).

The successful development of a rinderpest vaccine during the 1896-97 epidemic encouraged veterinarians to assume that they could replicate this success with a number of stock diseases.[16] In some cases vaccines developed in Europe, such as those for lungsickness and anthrax, were introduced to the Cape. However, the production of even established vaccines was problematic. Dissimilarities in strains and microbic virulence in different parts of the world meant that European formulae could not always be automatically transposed to the Cape environment. The historian Jan Todd has highlighted the problems that Australians faced in dealing with Louis Pasteur's double anthrax vaccine, which proved unsuitable for this country. As a consequence the New South Wales stock farmer, John Gunn, successfully developed an improved single vaccine that was far more convenient and effective in the Australian outback. Thus, although there had been a strong reliance on metropolitan knowledge, Todd has argued that indigenous science played a vital role in making the technical application of European ideas on colonial environments a viable proposition.[17] A similar situation applied to the Cape. Here the veterinarian, R.W. Dixon, carried out experiments on the anthrax formula to tackle a disease that was particularly prevalent amongst cattle in East Griqualand and Bechuanaland. Whilst he retained the

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[16] D. Gilfoyle, 'Science and Rinderpest'.
[17] J. Todd, *Colonial Technology*. Chapters 3 to 6 and the conclusion deal with these issues.

double vaccine, he recommended the annual administration of a dosage that was twice the strength of Pasteur's formula because of the virulence of the strains present in the Colony.[18]

Cape Colony, however, was also prey to diseases that were not present in Europe, and it was in this respect that the colonial scientists had to develop their own forms of prophylaxis for a number of indigenous infections. Between 1898 and 1905 the state provided funds to purchase stock and rent farmland for the carrying out of a variety of experiments. Two particular ovine diseases that were the subject of inoculation research were heartwater and bluetongue. The former had been identified as a tick-borne disease by the turn of twentieth century (chapter 3), whilst the causal agent of bluetongue had yet to be discovered. Dan Gilfoyle has discussed the inability of veterinarians to produce a suitable prophylaxis against heartwater. He has also demonstrated how the failure of veterinarians encouraged Eastern Cape farmers, such as Thomas King, to carry out their own inoculation trials illustrating the fact that professional scientists did not have the monopoly of veterinary knowledge. Despite the fact that these farmers were also unable to develop a vaccine, their attempts nevertheless undermined the confidence of the Veterinary Department, which was reflected in the official correspondence.[19]

In fact, overall, the efforts of veterinarians to develop a variety of vaccines in the first decade of the twentieth century failed. Despite their inadequate knowledge about the causal agent of many livestock diseases, colonial scientists regarded vaccination as the panacea for controlling all infections. This was evident in the research carried out into *lamziekte* as well as equine osteoporosis. Despite the fact that *lamziekte* is actually a form of bacterial botulism, until this was

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[18] CPP, G47-1906 and G30-1907: Reports of the Chief Veterinary Surgeon, p 40 and p 38 respectively.

proven in the late 1920s, many veterinarians were convinced that it was a consequence of malnutrition. As a result the provision of bonemeal to overcome dietetic deficiencies went hand in hand with abortive attempts to develop a vaccine.[20] The bacteriologist, William Robertson, meanwhile, spent over five years trying to inoculate horses against osteoporosis, a disease that was not really understood at that time.[21] Nevertheless, the Cape did succeed in producing a successful prototype for inoculation against bluetongue. This disease was prevalent in the Cape and threatened the merino wool industry since the symptoms involved the shedding of fleeces. In 1902 James Spreull created a vaccine using the serum from a recovered sheep mixed with virulent blood. Although his double vaccine was later improved upon by Arnold Theiler (veterinary bacteriologist in the Transvaal), Spreull's discovery was nevertheless important in indicating that the Cape could make its own contribution to the development of immunisation.[22]

Much of the research into this form of prophylaxis involved improving the manufacture of existing vaccines. Many injections such as those for anthrax, bluetongue and the cattle disease sponsziekte (quarterevil) required annual applications. This was problematic not only in terms of the cost to both farmers and the state, but also in terms of creating a standard, safe formula that was easy to distribute. Spreull's research on the bluetongue vaccine, for instance, involved not only inventing it, but also attempting to overcome the practical problems of producing enough serum for millions of sheep at an

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[19] D. Gilfoyle, 'Veterinary Science and Public Policy', chapter 6.
[20] CPP, G41-1904 and G30-1907: Reports of the Chief Veterinary Surgeon, pp 24-31 and 37 respectively.
[21] W. Robertson, 'Osteoporosis in Horses'. Lecture to the British Association, *CT*, 18 August 1905 and CPP, G47-1906, pp 62-65.
[22] R. W. Dixon, 'Catarrhal Fever of Sheep – Bluetongue', *AJCGH*, vol. 34 (May 1909), pp 487-491.

affordable rate.[23] After four years of testing, this vaccine retailed at ten shillings per 50 sheep.[24] As well as the cost and the time involved in organising repetitive inoculations, this particular vaccine also had the disadvantage that it could reduce the weight of an animal, thus depleting the value of its carcass and the size of its fleece.[25] Gilfoyle has argued that doubts about the safety of vaccines, together with their inconvenience, which was often compounded by a scepticism towards the veracity of germ theories, encouraged many farmers to support measures that involved killing visible ticks rather than dealing with invisible microbes.[26] As a result of this attitude, together with the failure of veterinarians to make substantial breakthroughs in the range of inoculations, not to mention the prevailing economic depression, financial support for this line of investigation in the Cape declined after 1905. This reflected both the influence of the pastoral farmers who wanted more research into ticks and effective dips, as well as their inability to attract more funding for the expansion of the Veterinary Department (chapter 1).

Co-operation between farmers and the state was more apparent in relation to the development of agricultural research facilities in the Cape. The Agricultural Assistant, Eric Nobbs, believed that it was the duty of government to fund and carry out investigations as individual farmers lacked the scientific expertise, the capital and the time to carry out this vital work.[27] Backed by the Agricultural Union and Farmers' Congress, Nobbs campaigned for the establishment of experiment stations throughout the country, arguing that:

> the primary object of an experiment station is to apply scientific principles and methods to the problems of

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[23] CPP, G41-1904, p 2.
[24] 'Government Notice', *AJCGH*, vol. 28 (January 1906), p 135.
[25] R. W. Dixon, 'Catarrhal Fever of Sheep'.
[26] D. Gilfoyle, 'Veterinary Science and Public Policy', chapter 6.
[27] CPP, G12-1903: Report of the Agricultural Assistant.

agriculture. An experiment station seeks to turn the discoveries of science to everyday use for the agriculturist; to study the laws of nature so as to increase the profits of farming. It is therefore essentially a scientific institution, an open-air laboratory for research, with a view of first learning and then demonstrating the most advantageous methods of cultivating crops, working the land and treating livestock.[28]

However, the problem of an impoverished treasury limited the execution of these ambitions. In 1905 parliament voted £5,000 for the creation of two 'open-air laboratories' at Robertson and Knysna. Experiments at Robertson involved cultivating crops under irrigation in order to encourage the development of arable farming in the fertile Breede Valley (chapter 4). At Knysna scientists explored the possibility of acclimatising crops to this *sourveld* region, in the hope of providing alternative employment for impoverished woodcutters (chapter 5). Despite repeated requests, however, no further stations were established in the years prior to Union. As a consequence, Nobbs became dependent on progressive farmers who were prepared to donate some of their land and time in order to carry out their own investigations under the guidance of the Agriculture Department. Nobbs coined the term 'co-operative experiments' to describe this method of joint research by agriculturists and the state. The Department provided instructions and free seed. In return farmers were expected to record their results in a reliable fashion. These were then collated by Nobbs, analysed, and published in the *Agricultural Journal*. Such publicity was not just about disseminating information, but was also intended to encourage as many farmers as possible to carry out their own trials to maximise the quantity of results, theoretically improving the veracity of these sample findings. In 1906 151 experiments were carried out on 4,492 plots, on 1,491 farms,

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[28] CPP, G47-1906: Report of the Agricultural Assistant, p 118.

throughout the country.[29] Nobbs was particularly determined to enhance the Colony's grain supply to reduce its reliance on imported cereals. He was convinced that the Cape could become self-sufficient in wheat, and hence bread production, if only a rust-resistant variety of seed could be engineered. This line of research, therefore, formed the focus of many of these 'co-operative experiments.' In 1907 45 varieties of seed were under observation, by which time two indigenous types, the Golden Ball and Square Ear, were discovered to be immune to this pernicious fungus. This was supplemented by trials using the rust resistant rietti seeds, originating from northern Italy, together with samples from Australia.[30]

Nobbs was also involved in a variety of other agronomic experiments. Attempts were made to diversify the arable economy by developing new industries such as tobacco and cotton production. In 1905 130 farms were involved in cotton trials. However, results were generally poor, especially in the west where summer rains destroyed the boll.[31] Tobacco, meanwhile, was grown more successfully in the Franschhoek and Drakenstein Valleys.[32] Investigations on manure, to optimise arable yields, constituted an important aspect of Nobb's research. Liaising with the chemical analyst, Charles Juritz, he helped to compile a pedological map of the Colony in order to provide farmers with information on the quantities and balance of nitrogen, potash and phosphates required in each district.[33] Topographical mapping, in general, was an important scientific strategy at this time.

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[29] CPP, C30-1907: Report of the Agricultural Assistant.
[30] CA, AGR 373, F1522, Nobbs's report for Chamberlain on the agricultural opportunities of the Colony; Nobbs's annual reports: G39-1904 and G30-1907; 'Wheat in Cape Colony: A Report on Recent Experiments', *AJCGH*, vol. 30 (April 1907), pp 503-520.
[31] CPP, G47-06 and *CH*, 4 July 1907.
[32] 'Tobacco Growing in the Cape Province', in S. Playne, *Cape Colony*, pp 767-773.
[33] The first district soil survey was published in 1909. P.D. Hahn and D.S. Stevenson, 'Karroo Soil, Lucerne and Ostrich Feathers', *South African Journal of Science*, vol. 7 (January 1911), pp 122-128.

Based on techniques that had already been adopted in southern Africa in relation to the discovery and development of deep level mining, it was also used to collate information from which agricultural development could be planned. This could be seen in relation to charting the seas (below), the demarcation of forests (chapter 5) and the creation of hydrological and hyetological cartograms as a precursor for the construction of hydraulic works (chapter 4).

As a corollary, improvement of yields entailed the amelioration of seeds. Nobbs accused ignorant and unscrupulous merchants of selling poor quality products, which either failed to germinate, or alternatively they mixed seeds with injurious spores, such as dodder, a species that could destroy a camp of lucerne.[34] With the support of the farmers' organisations, Nobbs introduced facilities for testing the purity of seeds and in 1907, he and Juritz, drew up legislation that forbade the adulteration of either seeds or fertilisers.[35] The introduction of this law came in the wake of statutory measures to try to prevent the adulteration of wine and brandy. Anti-contamination legislation had the support of both sides of the Assembly.[36] These laws represented a new element in defining the role of the colonial state. For the first time, the government became engaged in drawing up legislation designed to regulate the purity of agricultural products.

Nobbs's work also involved experiments to help the pastoral sector. The need to regenerate the quality of the veld (chapter 4) and to develop better methods of providing forage for livestock encouraged 'co-operative experiments' on a variety of grasses. As with forestry, the

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[34] E. Nobbs, 'Principles of Seed Investigation', *AJCGH*, vol. 24 (February 1904), pp 213-218; 'Seed Control in Cape Colony', *AJCGH*, vol. 24 (May 1904), p 617-621.
[35] 'Fertilisers and Farm Foods Bill', *CH*, 12 August 1907. Views of farmer's organisations can be found in *AJCGH*: Farmers Congresses in Queenstown, vol. 28 (April 1906), p 303, and Oudtshoorn, vol. 30 (April 1907), p 650; Agricultural Union conference in Cape Town, vol. 29 (July 1906), p 82.
[36] *CH*. The Wine, Brandy and Vinegar Bill was debated in the House of Assembly on 14 August 1906 and passed four days later.

most common trials involved species that were not indigenous to the Colony (chapter 5). Exotics, especially from Australia, were introduced to discover which herbaceous plants could best adapt to the Cape's environment in terms of swiftness of growth, resistance to drought and nutritional value to stock. It represented a floral colonisation based on observed similarities in climate and vegetation, complemented by a shared economic reliance on pastoral production. Such a rapprochement between the settler colonies situated on the imperial periphery provided an alternative network to the botanic exchange promoted by metropolitan Kew and the Imperial Institute.[37]

One of the plants introduced to the Cape was *Paspalum dilatatum*. A species indigenous to South America, it had been introduced to Australia in the 1890s. Here it had thrived. A leafy perennial, with deep roots to resist drought, it became an ideal fodder plant. In 1903 the Agriculture Department obtained a consignment of seeds from Australia and sold them at cost price to farmers who wished to experiment with alternative pasturage. The grass proved to be ideal herbage for *sourveld* or soils that were deficient in lime.[38] Other Australian plants were tried including saltbush, which was successfully grown in the Karoo and the north western districts. Succulent and rich in saline, saltbush was a particularly useful source of fodder in *lamziekte* areas.[39] The introduction of this species showed that improving grassland was not just about selection for veld

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[37] The botanic gardens at Kew, was an important scientific centre, experimenting with the introduction of plants from one part of the Empire to another. It represented an ecological exchange based on a metropolitan agenda of expanding the geographical areas in which valuable crops could be grown. Much of its influence was felt in the Crown, rather than the settler, colonies. By the early twentieth century, botanical research was also pioneered by the Imperial Institute. M. Worboys, 'Science and British Colonial Imperialism 1895-1940'; L. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens*, (New York, 1979); R. Drayton, *Nature's Government: Science, Imperial Britain and the Improvement of the World'*, (Yale University Press, 2000).

[38] *AJCGH*: vol. 23 (December 1903), pp 635-637; vol. 28 (March 1906), pp 309-310; vol. 29 (October 1906), p 454-456; vol. 32 (January 1908), pp 14-15.

restoration, it also involved the propagation of those species, which were believed to contain medicinal properties. Nobbs was impressed by the fact that large numbers of farmers were eager to participate in these experiments in a bid to reclaim land that had deteriorated through overstocking.[40]

As a consequence of these endeavours, the census returns suggested that there was much more enthusiasm for the use of alien grasses in the first decade of the twentieth century than in the past. The extent of planting with imports such as *Paspalum dilatatum* was enumerated in 1911 but not in 1904. This implied that the amount of land under exotics before 1904 was negligible, and that the 7,054 morgen recorded in the year after Union indicated an increase in such cultivation, which was in keeping with Nobbs's observation that farmers were keen to carry out herbaceous trials.[41] Overall, 'co-operative experiments' seemed to be relatively popular, as they combined the opportunity to carry out independent investigations, adapted to individual farms, at a nominal cost and with minimal accountability to the state.

Nobbs was highly critical of the failure of government to invest adequately in experiment stations and resigned his position in December 1907.[42] He was a government expert who believed that the adoption of scientific methodology and the concurrent application of technology could turn even the most inhospitable environments into

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[39] *AJCGH*: vol. 26 (March 1905), p 425 and vol. 31 (December 1907), pp 706-708.
[40] E. Nobbs, 'Experimental Cropping in Cape Colony', *AJCGH*, vol. 29 (August 1906), pp 240-249.
[41] UG32-1912: Union Census of 1911, part 9, p 1283.
[42] By 1909 Nobbs was employed by the British South African Company as Director of Agriculture in Southern Rhodesia. He tried, without success, to encourage the Rhodes Trust to invest in developing agricultural colleges in southern Africa. The trustees regarded educational and experimental work as secondary to direct investment in practical farming and forestry. Bodleian Library, Milner Papers Relating to the Rhodes Trust, Mss Milner Dep, reel 468, frame F85: L. Michell to A. Milner, 6 October 1909.

productive domains. The Kalahari, he once remarked could become a vast area of dairy farms, for science was capable of 'converting one of the waste places of the earth into a productive law-abiding settled country'.[43] Over-optimistic in aspiration, and disappointed in outcome, Nobbs's work nevertheless did lead to some useful research, and demonstrated to farmers that they were capable of carrying out their own investigations, and that modern methods could result in better crops and harvests. Cereal yields, for instance, did experience an upward turn after 1904. By 1908 figures for the production of wheat and rye had risen by 35-40 per cent within four years. The 1890s had witnessed a decline in cereal crops, largely due to fungus, and the greater proliferation of rust resistant varieties gradually began to pay economic dividends.[44]

Whilst agricultural scientists sought to improve terrestrial production, the Marine Biologist, John Gilchrist, explored the possibilities of developing a profitable fishing industry. The recruitment of a Marine Biologist in 1896 was a consequence of the effects of over-fishing in coastal waters, and the need to search for hitherto untapped shoals further out to sea. Fishing was generally carried out on a small scale by individual crews of primarily coloured and/or Afrikaner anglers, who combined working at sea with employment on the land. With the depletion of supplies of snoek and other pelagic (inshore) species in the 1890s, the commercial survival of such enterprises was threatened due to the absence of the necessary technology required to explore deeper waters.[45] A lack of confidence in the actual abundance of piscine supplies deterred shipping companies from investing in deep-sea trawlers, equipped with cold storage

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[43] CPP, G39-1904, p 25.

[44] In 1908, wheat production reached 729, 338 muids compared with 535,592 muids in 1904. Rye increased from 93,499 to 132,573 muids over the same years. *SRCGH*, 1908, p 176 and G19-1905, p clxxxi.

facilities, which could stay out to sea for a longer duration. Scientific mapping therefore became a necessary precursor for the development of commercial trawling.[46] After the South African War the expansion of the fishing industry formed part of the Progressive Government's agenda of making the Colony self-supporting in foodstuffs. The Minister for Agriculture, Arthur Fuller, somewhat clumsily advised parliament that: 'In the fisheries of this country, we had perhaps one of the most important assets in the country, and one that had not, in the past been made much use of ..... the fishing industry of this country was only second to the wool, mohair and wine industries.' [47]

On his arrival in the Colony, Gilchrist commissioned the building of a reconnaissance trawler, which was named *Pieter Faure* after the current Minister for Agriculture. From 1897 until 1906 this trawler explored and charted the coastline of the Cape as well as that of Natal. Gilchrist's vividly described his thalassic surveys in his annual reports and in his publication 'Marine Investigations in South Africa' (1902-1906). Like Lounsbury (chapter 3) he viewed his endeavours to understand both maritime life and oceanography in specifically economic terms. By 1899 Gilchrist had delineated the hitherto unexplored fishing banks of Agulhas Bay. Optimistically he stated that this 'may be the basis of a great fishing industry'. He continued:

> over one thousand square miles of this ground have been examined carefully, and we can now confidently assert that there is here a great source of wealth and food supply for the Colony [48] .... We now know that one acre of the

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[45] L. Van Sittert, 'Labour, Capital and the State in the St. Helena Bay Fisheries c1856-1956' (University of Cape Town, D.Phil. thesis, 1992), chapter 2.
[46] W. Wardlaw Thompson, *The Sea Fisheries of the Cape Colony From Van Riebeeck's Days to the Eve of the Union* (Cape Town, 1913), chapter 1.
[47] *CH*, 20 June 1906, p 182.
[48] CPP, G52-1899: Appendix to the Annual Report of the Government Biologist, p 2

> Agulhas Bank can produce as much food for the people of the land as hundred of acres in the Karroo.[49]

The metaphor of the Karoo as a land of abundance, resonated with the sanguine expectations entertained by the hydraulic engineer, Bernard Ritso (chapter 4). Confidence that scientific knowledge was the basis for the beneficial economic transformation of landscapes was not just restricted to crop production, but also pertained to the sea. The presence of fish, Gilchrist argued, was dependent on the strength of currents and the effects of climatic variations. The Cape was unique, he claimed, because of the impact of the warm currents from the Indian Ocean colliding with the colder Benguela stream from the Antarctic. This influenced both temperatures and levels of salinity, which in turn affected the types of fish that could survive in very specific and localised environments.[50] Like Lounsbury in relation to his work on ticks, Gilchrist carried out a detailed investigation of hitherto unclassified pisciforms, which were found in Cape waters, in order to discover their life histories. Aquarium and laboratory facilities were established for this work at St. James in False Bay in 1898. Gilchrist's research combined investigation in the natural environment of the sea with studies in the artificial world of the laboratory, thus mirroring the development of entomological research in the Colony at that time. Gilchrist also encouraged officers working at the 21 marine stations, dotted along the coast, to report findings and attempt to keep some kind of statistical record as to the size of catches. All this information was collated and used as a basis for assessing the potential of the industry by looking at migration

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[49] Ibid., p 5.
[50] J. Gilchrist, 'Some Features of the Marine Fauna of South Africa', *South African Philosophical Society Transactions*, vol. 15, (1904-1905).

patterns and reproductive rates, as well as analysing the effects and extent of over-fishing.[51]

These piscine discoveries were economically important because they formed the basis of a dramatic increase in commercial trawling in the first decade of the twentieth century. The success of the *Pieter Faure* in terms of the quantity of fish it caught and sold, inspired others to invest in this industry. In 1901 there was only two colonial trawlers ploughing the Atlantic and Indian Oceans.[52] By 1905 this figure had increased to nine.[53] All these vessels were financed out of private capital and did not receive government subsidies.[54] The main market for frozen fish was the Rand, where fish constituted a cheaper form of protein than meat in the mining compounds. According to W. Wardlaw Thompson of the Agriculture Department, 72.5 per cent of the Colony's fish exports went to the former Republics by 1909.[55] The value of the hinterland trade in frozen fish rose from £5,195 in 1904 to £81,684 in 1909.[56] Concurrently there was a sharp reduction in the quantity of frozen, cured and processed fish introduced into the Cape. Total imports declined from £210,559 in 1903 to £77,605, six years later.[57] These more favourable trade returns were attributed to advances in the trawling industry, itself a manifestation of public confidence in ichthyological surveys. These figures suggested that the first decade of the twentieth century did witness a partial realisation of the Progressive Government's economic objectives in terms of improved fish supplies.

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[51] A diary of events on the *Pieter Faure*, together with his general discoveries, and details from the marine stations are all contained in his annual reports.
[52] CPP, G56-1901: Report of the Government Biologist, p 1.
[53] CA, AGR 466, F3807: J. Gilchrist to C. Currey, 10 April 1905.
[54] CA, AGR 386, F1952: J. Gilchrist to M.F. Barclay, 28 January 1903.
[55] W. Wardlaw Thompson, *Sea Fisheries*, p 83.
[56] Ibid., p 150.
[57] Ibid., p 151.

Nonetheless, the development of trawling was not universally welcomed. Like the woodcutters of the Knysna and Tsitisikamma Forests (chapter 5), poorer fishermen, who lacked the financial means to invest in new technology and to recruit the necessary labour to participate in this increasingly capitalised industry, feared for the survival of their livelihoods. Those who could only afford to use line and seine nets accused trawlers of depleting the sea of fish.[58] Indigenous fishermen also failed to compete successfully with Sicilian immigrants who used covered boats and set nets, which were suitable for sailing further away from the littoral than the vessels of their colonial-born counterparts. This too undermined the fortunes of impoverished fishermen who, due to primitive technology lacked the means to fish far beyond the shore. [59]

Gilchrist's response to complaints about competition resonated with the opinions articulated by the forest conservators (chapter 5). He believed that capitalist production should be promoted regardless of the effects that this might have on the future economic autonomy of poorer individuals. In 1904 he wrote: 'It is certainly a hardship for the native fishermen to have trawlers competing with them, but this cannot weigh against the consideration of an increased fish supply for the whole of South Africa'.[60] Government scientists, in general, tended to regard large-scale capitalist development as the key to agricultural progress, the attainment of rural self-sufficiency and the provisioning of cheap food.

Although the fishing industry formed an important component of the post bellum rhetoric concerning nutritional self-sufficiency, in practice it was this part of the agricultural sector, which received the

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[58] For example the complaint of fishermen from Plettenberg Bay. G34-1907: Report of the Government Biologist, p 23

[59] W. Wardlaw Thompson, *Sea Fisheries*, chapter 2.

least help from the state during the period of retrenchment. In 1907 Gilchrist's contract was terminated, officially on the grounds of cost. New banks of shoals had been found in the Indian Ocean, and the government believed that further developments in this industry should be left to private trawling companies. Just as Ritso argued in relation to water boring, the principal role of the state in this enterprise should be to invest in experimental drilling. Once water had been found individual farmers should be responsible for searching for further aquatic supplies (chapter 4). This logic was enacted in the Treasury's attitude to Gilchrist's position. His surveys had already contributed to the development of a trawling industry, precluding the need for further official exploration.[61]

(2.3) The Inauguration of the *South African Stud Book*

Ameliorating pastoral production involved more than advances in immunisation; it also necessitated improvements in the breeding of livestock. From the nineteenth century, progressive farmers had tried to establish their own stud flocks of merinos and angoras. However, the loss of many animals through war and drought at the turn of century had encouraged some breeders to push for the compilation of a stud book, detailing pedigree animals in existence in the Colony, from which other farmers could procure new breeding stock. The forerunner of the Stud Book Association was the Angora Breeders Association founded in 1894. Based in Graaff Reinet, pastoralists had hoped to be able to compete more effectively against Turkish producers by improving the quality of their own animals through

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[60] CA, AGR 387, F1952: J. Gilchrist to the Acting Under-secretary for Agriculture, 28 December 1904.

[61] Gilchrist's dismissal was contested by the Department of Agriculture and revealed tensions between this Department and the Treasury over the allocation of funding.

scientific breeding. All angora, believed to be the progeny of pedigree stock, had to be examined three times over the course of three years before they could be recorded in this directory. By 1904 only 180 goats had been registered with 1,500 waiting to pass the final tests. The work was costly and many farmers could not afford to defray the examination charges.[62] It was for this reason, that the secretary of the Angora Goat Breeders Association, Charles George Lee, looked to the government for official recognition of his and his colleagues' work. Lee planned to increase the scope of a stud book to cover all domestic animals with the help of government subsidies. Breeders from the other South African Colonies supported this project at an inter-colonial veterinary conference held in Bloemfontein in December 1903. Here delegates estimated that £4,000 was needed to create a directory for the whole of South Africa, and requests were made to the Cape government for a £1,000 contribution.[63] A shared agenda of pastoral amelioration incorporating all the British colonies in South Africa was thus emerging. As a precursor to political union, farmers (and veterinary scientists) to some extent led the way in creating a fundamental basis for South African hegemony which went much deeper than the realms of high politics. Their actions were indicative of a cultural move towards 'closer union', and resonated with the ideas of politicians and intellectuals who sought to forge a South African identity that would underpin future colonial amalgamation.[64]

A. Fuller to E. Walton, 30 May 1907: Walton Papers (Cory Library), MS 17 142, folder 9.

[62] CPP, A9-1904: Report of the Select Committee on the Angora Goat, evidence of C.G. Lee, pp 1-23.

[63] CPP, G41-1904: Report of the Colonial Veterinary Surgeon, pp 16-20.

[64] P. Merrington, 'Pageantry and Primitivism: Dorothea Fairbridge and the Aesthetics of Union', *JSAS*, 21, 4 (1995) and S. Dubow, 'Colonial Nationalism: The Milner Kindergarten and the Rise of South Africanism 1902-1910', *History Workshop Journal*, vol. 43 (1997).

Having secured the £1,000 from Jameson's government,[65] Lee launched a media campaign to encourage people to have their stock examined and registered. Pedigree animals, he argued, were more valuable because they provided a higher yield of meat, milk or wool than mongrel varieties. 'The desire to start a stud book is but carrying out the policy of breeding the best animals on the most economic and systematic lines', he wrote.[66] As well as subscribing articles to the *Cape Times*, he also encouraged Afrikaners to participate in the enterprise and composed letters in Dutch, which were submitted to *Ons Land*.[67] Lee was confident that this book would lead to more money remaining within the country, as farmers would no longer have to look abroad to acquire pedigree animals to supplement those available from existing stud farms in the Colony. The register was aimed at encouraging all farmers to improve their breeds and thus enhance pastoral production. As the Cape was so vulnerable to animal diseases and the effects of drought, Lee believed that good breeding stock was even more vital, since farmers had to optimise yields whenever they could. Adversity was therefore seen as a means of stimulating modernisation and improvement. Eventually, Lee hoped, 'we should become the world's depot for pure-blooded pedigree animals'.[68]

The *Stud Book* was first published in 1907 and divided into two sections. The publication itself recorded recognised pedigree varieties, whilst an auxiliary register was introduced for indigenous species such as Afrikander cattle, which were valuable animals, but not internationally acknowledged as such. Registration was a contentious issue as the Cradock Conference of July 1904 revealed. Farmers

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[65] 'S.A. Stud Book – Conference at Cradock', *MNKF*, 20 July 1904.
[66] 'Stud Books and Stock Breeding', *CTW*, 24 August 1904.
[67] 'Vee Stamboek', 11 June 1904; 'Kaapse Stamboek Fokkers', 4 March and 30 December 1905.
[68] *CTW*, 24 August 1904.

disputed many decisions as to what exactly constituted 'pure stock'. However, as Lee explained, entry into the book had to be strictly monitored to protect the credibility of the project.[69] Overall, the compilation of this book was a success. By 1906 2,500 stock had been listed, proof, Lee claimed that the Colony was capable of producing world class animals. Lee was especially optimistic about the future of wool and mohair. 'The quality of sheep gives great encouragement for the merino sheep industry of the Cape', he explained.[70] South Africa was hailed as the first country in the world to have granted a pedigree to both angora and ostriches.[71] Unfortunately, the registration of bovines was less successful, indicating that optimal varieties of dairy or beef cattle were fewer in number and denoting the less developed aspect of this industry.

The desire of progressive farmers to improve breeds precipitated new lines of scientific investigation to promote the enhancement of yields. One species that became the subject of research was the ostrich. Between 1891 and 1904 the ostrich population was reported to have risen from 154,880 to 357,412 birds.[72] In the first decade of the twentieth century there was a rapid increase in the volume of feather exported to Europe and North America. In 1903 the value of this trade amounted to £895,040. In 1909 figures reached £2,098,085, only £756,750 behind the total wool returns for that year.[73] Breeders, such as Oscar Evans and Arthur Douglass believed that productivity and profits could be increased if they could only overcome the problem of defects in feathers known as bars. The professor of zoology at Rhodes University in Grahamstown, James

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[69] 'S.A. Stud Book'.
[70] 'South African Stud Book – A Retrospect', *AJCGH*, vol. 28 (February 1906), p 205.
[71] Ibid., pp 205-208.
[72] CPP, G19-1905: Census of 1904, p 480.
[73] Figures from the *SRCGH* of 1902, p 173 and 1909, article 46.

Duerden, carried out research into these deformities.[74] Addressing the Koonap Farmers' Association, Duerden described how these blemishes in the smoothness and colouring of the plumage could reduce the value of an individual feather by up to 50 per cent.[75] Duerden carried out dietetic and veterinary experiments on birds in order to discover the cause of these imperfections.[76] Although, he was unable to formulate any conclusive results, his investigations were indicative of the growing diversity of expertise invested in the amelioration of the pastoral economy. The involvement of a university in agricultural investigations was also a new departure in the Cape in terms of the locale for a form of research, which was underpinned by a purely economic rationale. The use of Rhodes University for this line of applied science was also largely a consequence of the lack of state-managed experiment stations.

The creation of the *Stud Book* not only stimulated a greater appreciation for the application of science in farming, it also encouraged a more objective approach to judging at agricultural shows. These exhibitions were to be more than just occasions at which producers demonstrated their expertise and competed for prize money. At the Agricultural Union congress in 1908 farmers voted in favour of proposals made by Hutcheon's successor as Director of Agriculture, John Noble Jack, for enhancing the value of these events. He suggested that stock, especially sheep, should be classified in a uniform manner throughout the Colony. Merinos should be designated as either Tasmanian, Rambouillet or Vermont so that breeders could compare varieties and potential yields. Judges were encouraged to publish detailed notes as to why they awarded

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[74] Rhodes University College was founded by Act of Parliament on 31 May 1904. It was financed from local subscriptions and endowments from the Rhodes Trust and De Beers.

[75] 'Bars in Ostrich Feathers', *AJCGH*, vol. 28 (May 1906), pp 704-717.

particular prizes, so that others could appraise the qualities sought by experts. The Agricultural Union also decided that these exhibitions should incorporate lectures on agricultural subjects as a means of imparting information to a wider audience, including farmers who would not normally attend the meetings of local agricultural associations.[77] Compiling the *Stud Book* and the scientific approach to breeding it inherently entailed, had ramifications beyond the furtherance of better animal husbandry. It helped to stimulate a generally more informed approach to pastoral land management.

The exact value of this publication itself in contributing to the great increase in pastoral yields over the following decades is impossible to quantify with any accuracy. Nevertheless, what is notable is that the value of Cape clips did increase over time and the amount of wool and mohair exported grew dramatically. According to the historian, Tony Pringle, 1912 was the record year for mohair production and by the time of the First World War, South Africa was seen as the 'premier mohair producing country, both as regards output and quality'.[78] South Africa had finally overtaken Turkey as the world's largest produce of this fibre. This implied not only improvements in breeding to produce a less coarse fleece, but also more careful preparation of mohair in terms of classification and cleanliness. Wool production also increased in the following years from 40 million pounds in weight in 1906 to nearly 60 million just two years after Union. Better breeds also encouraged an increase in the average yield per animal. In 1905 an individual sheep produced about five pounds of wool; by the 1930 this had grown to seven pounds. Whatever its precise contribution to pastoral development might have been, the book's inauguration, based on the principle of better stock

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[76] J.E. Duerden, 'Present Notes on the Ostrich in South Africa', *AJCGH*, vol. 31 (December 1907), pp 668-675.
[77] Reported in the *AJCGH*, vol. 33 (August 1908), pp 217-218, 223, 231

better yield, must have provided an important cultural foundation for the improved breeding methods that enabled the expansion of the wool industry, the volume of which peaked in the 1930s.[79]

(2.4) The Promotion of the Fruit Trade

As well as subsidising the *Stud Book*, the Progressive Government expanded the function of the colonial state by becoming involved in efforts to promote the fruit trade. Wool, mohair and feathers were established industries with well-developed distributional networks in London. However, horticulturists, who were increasing their fruit production, had problems disposing of their produce both at home and abroad. The establishment of orchards during the 1890s had been extensive in terms of both spatial location and the diversity of crops under cultivation. Apples, pears, apricots, peaches and pineapples had all been successfully grown in the Colony. Bathurst, for instance, had become a centre of pineapple production, yet due to poor publicity, the market was almost limited to the environs of Grahamstown.[80] The discovery of new techniques to deal with diseases such as *Mal di gomma*, which affected orange trees in the Eastern Cape, increased citrus output and hence a demand for new supply outlets was created.[81] Eustace Pillans, the official Horticultural Assistant, observed that Lower Albany was becoming 'one huge garden plot', and was impressed by the scientific methods of farming which were increasingly in operation in the Eastern Cape. Writing in 1907

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[78] T. Pringle, 'A History of the South African Mohair Industry', p 63.
[79] W. Beinart 'Animal Stories' in G. Wynn (ed). *Nature, Culture and Colonialism*, figures 1 and 2.
[80] 'Rural Cape Colony - Bathurst', *AJCGH*, vol. 24 (June 1904), pp 716-729.
[81] W. Masters pioneered new cultural methods to prevent the roots of orange trees becoming infected with this disease; 'Root Rot and Orange Trees', *AJCGH*, vol. 24 (March 1904), pp 328-329.

he reflected on the changes that had occurred since his previous visit in 1905 and commented that:

> it was gratifying to see the old-fashioned rule of thumb methods giving way to practice founded upon the knowledge of principles and throughout my visits I have noticed a distinct improvement in the way cultural difficulties are dealt with, and random guesswork remedies founded on no principles are becoming obsolete.[82]

In the Western Cape some horticulturists branched out into the dried fruit industry in order to make use of either poor quality or surplus crops. Petrus Cillie, for example, founded the co-operative South African Dried Fruit Company, with private capital, in Wellington in 1908. He adopted methods pioneered in California for preserving a variety of produce.[83] Large-scale enterprises such as the Cape Orchard Company and the Rhodes Fruit Farms organised their ventures specifically for an export market. Central packing houses were constructed for the collection of fruit in order to promote uniformity in quality, standardise packaging and to tackle the labour shortage by pooling workers in a single depot.

There was an urgent need to develop markets abroad because of limited retailing opportunities in South Africa. Fruit might not have been normally recognised as part of the Capetonian diet since Pillans commented in 1908 that fruit was only now 'becoming more and more an article of human food'.[84] Percy Malleson of the Cape Orchard Company explained that it was difficult to find remunerative outlets on

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[82] CPP, G30-1907: Report of the Horticultural Assistant, Eustace Pillans, pp 112-113
[83] This Company was originally known as the Prune Growers Association (1907) but altered its name as it diversified into drying a variety of products. The manager C.L. Maltby was sent to California in 1907 to learn the processing methods adopted there. Articles on this organisation can be found in *CTW*, 20 February 1907, 13 November 1907, 22 April 1908 and 9 December 1908.
[84] CPP, G31-1908: Report of the Horticultural Assistant, p 87.

the Rand due to the dominance of middlemen and agents.[85] Thus producers looked to Europe for their customers and had to contend with strong commercial rivalry from Californian, Australian and Argentinean farmers. As with pastoral products, the ability to compete successfully entailed knowledge of the market and the shipment of classified goods of a recognised standard. In 1906 the Fruit Exporters Association, disheartened by the un-remunerative prices received in the metropole, attributed this to consignments of poor quality, overripe, bruised fruit which were repudiated by London buyers.[86] This resonated with the complaints of wool and mohair producers, embittered by the fact that some farmers were negligent in preparing goods for export, which consequently undermined the reputation of Cape crops in Europe.

Jameson's Government responded to these concerns by organising a publicity campaign and by employing agents to carry out market research. In 1906 the Superintendent of Agricultural Co-operation, Patrick Hannon, visited Britain to negotiate with agents and buyers, and drew up recommendations to assist Cape horticulturists. Overall, the flavour of Cape fruit was praised but critics suggested that each variety of produce should be of a standard size and packed in a particular way to reduce bruising and deterioration in transit.[87] To help introduce new methods on the ground, Jameson appointed three expert packers, including one woman, to tour fruit farms and demonstrate how to assemble fruit for export.[88] Peter Bam, the Progressive Member of the Legislative Assembly for Cape Town, was appointed to visit Canada to study methods of marketing there, and was instrumental in organising the South African Trade Fair in

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[85] Eastern Province Fruit Growers Congress, East London, November 1904. *AJCGH*, vol. 26 (January 1905), pp 69-82.
[86] 'Meeting of the Fruit Exporters Association', *AJCGH*, vol. 28 (June 1906), pp 830-834.
[87] CA, PMO 210, F 1405/05: Hannon's report to Jameson, June 1906.

London in early 1907.[89] This Exhibition did have the effect of bringing Cape produce before a wider audience and opportunities were created for negotiating larger export networks.[90] Following this event, the government adopted the Canadian and New Zealand practice of marketing through a trade commissioner. Charles Du Chiappini was appointed to this position, with a brief to advertise national products, discover new retail opportunities and discuss prices and outlets with buyers. Du Chiappini believed that the creation of a national brand would provide the best means of advertising and promoting a quality product.[91] To this end, R.J. and A.C. Bulmer became the first export inspectors, based at the Cape docks. Regulations were permissive, but the government recommended that all farmers should have their fruit examined before embarkation, the superior produce receiving the 'extra selected' label.[92]

As with the initiation of the *Stud Book*, the extent to which these new measures themselves, independent of global economic pressures or production activities in the countries of rival exporters, contributed to overall growth, is impossible to disaggregate. What is notable however is the enormous increase in the amount of fruit cultivated according to the census enumerations of 1904 and 1911. Orange production for instance increased from around 35 million pieces of fruit in 1904 to 70 million seven years later; apples rose from 21 million to 74 million and apricots from 34 million to 84 million.[93] Commercial records also showed that there was a huge growth in trade in the years immediately following the 1907 South African

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[88] CPP, G47-1907, Appendix B: Reports of the Itinerant Fruit Packers.
[89] A discussion of the trip to Canada and the Exhibition can be found in *CH*, 30 August 1907.
[90] CPP, G57-1907: Report of the Trade Commissioner.
[91] Ibid.
[92] 'Government Notices: Inspection of Fruit for Export', *AJCGH*, vol. 30 (February 1907), p 265-268.
[93] CPP, G19-1905, p clxxxiv and UG32-1912, part 9, pp 1304-1305.

Exhibition and the appointment of Du Chiappini as trade commissioner. In 1906 the Cape exported 59,866 boxes of fruit bringing £14,134 into the country. The following year exports had increased to 82,355 boxes. In the year of Union, the Colony shipped 201,871 crates of fruit valued at £34,798.[94] Although revenues were insignificant compared with the returns from pastoral exports, these figures were important as they proved that arable farmers could also develop a product for export. The fruit trade provided incentives for viticulturists who had suffered loss of earnings through phylloxera to diversify into horticulture with some assurance of market opportunities in the northern hemisphere.

Horticulturists themselves seemed to have been impressed by the work of the Progressive Government in encouraging this sector of the economy. A farmer from Grahamstown, H. Hards, for example, claimed that no government had done more for the fruit farmer than that of Jameson's.[95] Alfred Davey from Bedford expressed appreciation for the charismatic Du Chiappini who had done much to remove the common prejudice held against Cape fruit.[96] The expansion of horticulture and the increase in trade was a result of a joint approach on the part of both government officials and individual producers. Collective action by farmer and state had encouraged the augmentation of individual wealth and helped to develop the resources of the country.

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[94] Figures taken from C. Aucamp, 'Establishment and Development' p 87.
[95] 'Vine and Fruit Growers Congress, Cape Town, May 1906', *AJCGH*, vol. 29 (July 1906), pp 36-44.
[96] CPP, G57-1907: A. Davey's report on the fruit industry, dated 30 May 1907.

(2.5) The Co-operative Experiment in Production and Marketing

The post bellum Cape witnessed an increased interest on the part of both the farmers and the Progressive Government to develop co-operatives. The issue also received considerable coverage in the press. In 1905 the future trade commissioner, Charles du Chiappini, submitted articles entitled 'The Value of Co-operatives' to the *South African News*.[97] Du Chiappini regarded the introduction of collectives as a means of trying to overcome the problem of 'poor whiteism' (chapter 1), by providing opportunities for less prosperous farmers to combine together to increase output and take control of the retail process. Co-operatives constituted an attractive alternative to capitalist methods of production, he argued, on the grounds that profits were not dispensed as dividends to foreign shareholders, but were divided between its members, on the basis of a distribution system proportionate to the amount of goods an individual produced. The principle of one share one vote gave each member the chance to play a direct role in the running of the business. Du Chiappini also claimed that co-operatives enhanced productivity and provided opportunities for more people to hold a viable economic stake in the land.

In many respects, his commitment to the idea of local collectives, independent of foreign investment and interference, together with the introduction of schemes to ameliorate the lot of poorer members of society, echoed the rhetoric of ideologues who were critical of large-scale international capitalism. Since the emergence of company mining in Kimberley in the 1870s, which concluded with the creation of De Beers Consolidated in 1888, a critique had emerged about the power and wealth of big business, whose profits were shared by the few, were often expatriated, or were seen to corrupt politics.

The writer Olive Schreiner and her husband, the farmer, lawyer and politician, Samuel Cronwright-Schreiner, attacked monopolists and suggested that: 'A small, resolute and keen body of men, amalgamated with Rings and Trusts, are quickly and surely setting their hands round the mineral wealth of South Africa. Our diamonds are already a complete monopoly in their hands; our gold, our coal, the richest portions of our soil, and even our public works are tending to fall into the grasp of our great amalgamators'.[98] The power that corporations such as De Beers could wield, they argued, constituted regressive rather than progressive development. Their influence had to be reduced lest the country became immiserated by these 'plagues of locusts'.[99] Similar, albeit less descriptive, critiques of restrictive commercial practices were articulated by politicians such as John W. Jagger and Walter Rubidge who felt that the influence of the monopsonistic 'Meat Ring', undermined free trade in produce and the success of independent retailers (chapter 1).

Supporters of co-operatives, such as Du Chiappini, looked to foreign precedents as a model for the success of these ventures. In seemingly poor countries, such as Denmark and Ireland, this approach had helped to revive the rural economy. Co-operatives provided opportunities for small-scale farmers to deposit products collectively such as milk, eggs and bacon in order to launch successful dairying, egg packing and bacon curing industries, for a local, and in

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[97] *SANW,* 4,11, 18, 25 January and 22 February 1905.
[98] O. Schreiner and S. Cronwright-Schreiner, *The Political Situation* (London, 1896), p 34. S. Cronwright-Schreiner was the South African Party Representative for Beaufort West 1904-1908. Their indictment of the links between capital and politics came in the light of the Jameson Raid (1895-96). Links between De Beers and politics continued to be attacked by the Progressives' opponents during the 1903-1904 election campaign. For example: 'Merriman's Address at Dordrecht', *SANW,* 20 January 1904 and 'Beck at Worcester', *SANW,* 20 January 1904. Thomas Theron, the President of the Bond, made the same critique in his address to the Bond Annual Congress in 1904, *SANW,* 5 March 1904.
[99] O. Schreiner and S. Cronwright-Schreiner, *The Political Situation,* p 15-16.

the case of Denmark, an overseas market.[100] Germany served as an example for the creation of co-operative land banks based on the Schulze-Delitzsch and Raffeisen Systems.[101] In some countries, for example, Denmark and Holland, co-operatives had been developed by agriculturists themselves.[102] In others, such as Canada, the government granted loans to help farmers establish creameries, whilst in Victoria similar arrangements were made with wine producers.[103] In the Cape both farmers and the state initiated co-operative ventures during the post bellum period. Canada and Australia, to some extent, provided a model for the Progressive Government's intervention in both the dairying and viticultural industries, reflecting, a shared interest in co-operative development within the anglophone settler colonies. This similarity in economic agendas was also reflected in the evolution of scientific networks, involving botanical exchanges (above and chapter 5), improving the methods for dealing with injurious insects (chapter 3) and the development of irrigation works (chapter 4).

The state's role in the development of co-operative production schemes was one of the most innovative of all the agricultural policies pursued by the Progressive Government. In 1905 the Select Committee on the Cost of Living had emphasised the need for co-operation in order to enable the Colony to become self-sustaining in victuals.[104]

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[100] 'The Value of Co-operatives', *SANW*, 11 January 1905.
[101] Ibid., 18 January 1905. Membership of these credit co-operatives consisted of between 50 and 200 individuals. Each bought one share, staked at a high value, which could be purchased in instalments. From this pool of money, loans could be paid out to farmers who had already bought their share and whose cause seemed worthwhile to his colleagues. These models were also referred to by Patrick Hannon, the Superintendent of Co-operatives in his first annual report, CPP, G66-1906.
[102] CPP, G66-1906, pp 3-5.
[103] Ibid., pp 13-14. According to Hannon, the Canadian Agricultural Commissioner introduced loans and regulations for the setting up of dairy co-operatives in 1896. R. Dubois provided details of state launched co-operatives in Victoria, in his evidence before the Select Committee on the Agricultural Department, CPP, C1a-1904, pp 12-16. Here the government offered viticulturists 50 per cent of the capital, up to a maximum of £3,000, and remained the proprietor of the co-operative, until the state's share of the debt had been redeemed.
[104] CPP, C1-1905: Report of the Select Committee on the Cost of Living, pp viii-ix

Arthur Fuller fervently endorsed these ideas. Fuller was impressed by the fact that co-operation had resulted in a large increase in agricultural output in several European countries, and was convinced that the same approach had to be adopted in the Cape.[105] As a consequence the Government recruited Patrick Hannon, who became the first Superintendent of Agricultural Co-operation in the Colony in September 1905. Hannon was the son of an Irish farmer and had travelled widely in both Europe and North America in order to study the organisation of co-operatives there. From 1894 he had been attached to the Irish Department of Agriculture, where he had been involved in the setting up of rural collectives, which he believed were important not only as a means of stimulating economic growth, but also as a way of trying to overcome social and religious disunity.[106] This experience was relevant to the Cape as it resonated with the hope of politicians of both political parties that the wartime legacy of white ethnic divisions could be healed through a shared commitment to agricultural development (chapter 1).

On his arrival, Hannon, accompanied by Fuller, commenced a three-month tour of the country, publicising his views on the benefits of such schemes. Hannon regarded co-operatives as the panacea for solving economic problems affecting less prosperous farmers throughout the world. Many agriculturists, he contended, lacked adequate capital for investment in stock or machinery. Their geographical isolation contributed to an enduring ignorance of technical and scientific developments. Farmers were constructed as essentially conservative in their approach to life, refusing to introduce new ideas unless they were fully convinced of their financial

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105 For example, 'A. Fuller's speech to the Middelburg Farmers Association', *CTW*, 9 August 1905.

106 'Enter Mr Hannon', *CTW*, 27 September 1905; CPP, G66-1906, p 2; CPP, A5-1907: Select Committee on Agricultural Co-operation, p 1.

viability.[107] Hannon recommended co-operation because it would bring farmers together to share knowledge and skills and enable them to formulate their own development strategies to serve their mutual interests. Members of these organisations could pool their resources in terms of capital, equipment and labour. Co-operatives could provide greater financial security than an individual thus facilitating the acquisition of loans at lower rates of interest. Credit societies would enable poorer farmers, generally shunned by moneylenders, to obtain monetary advances. Combination would also enable bulk purchasing of agricultural prerequisites such as manures, seeds and implements, thus reducing the cost of the outlay.[108]

During the tour, Hannon and Fuller addressed 66 meetings, each attended by between 30 and 250 farmers. Enthusiasm was greatest amongst wine and dairy producers in the Western Cape, so much so that Fuller questioned his previous impressions on the locale of rural progressivism.[109] Flattering his audience in Worcester, the Agriculture Minister confessed that:

> He knew very little of the Western Province until very recently. His whole experience had been confined to the Eastern Province, and naturally his views were always Eastern but they had been somewhat disillusioned since he had travelled through the Western Province. He really believed the Eastern man had to take a back place. It was hard for him to admit that, coming as he did from the East and having always held up the Eastern man as a progressive agriculturist. He had however altered his opinion and thought that the best men were to be found in the Western Province... The future of the Cape Colony was wrapped up in agriculture and the farmers were the men who were going to make it a prosperous country. The

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[107] CPP, G66-1906, p 1.
[108] Hannon's views on the benefits of co-operatives were reported in the *AJCGH*. For example: vol.27 (November 1905), pp 669-672; vol. 27 (December 1905), pp 747-755; vol. 29 (September 1906), pp 331-367; vol.31 (August 1907), pp 178-185.
[109] 'Interview with P. Hannon', *CTW*, 24 January 1906.

> co-operative movement was going to make the prosperity of the country.[110]

Since much of the debate focused on the creation of co-operative wineries and creameries, it was perhaps not surprising that the greatest interest emanated from the west. This was the centre of the viticultural industry. There was also a large market for butter and cheese in Cape Town itself. The infrastructure of the Western Cape was more advanced than in many parts of the Colony, and the development of cold storage facilities on trains facilitated the transportation of produce from the capital, via the railway links, to the interior markets of Kimberley and the Rand. In the west many farmers, in particular viticulturists, were Afrikaners and they formed the core of the co-operative schemes that were promoted as the future source of progress. The parochial nature of these small-scale combinations was attractive to western farmers as they were in accord with Afrikaner notions of local control of rural production (chapter 1). The fact that their establishment was also optional appealed to agriculturists who did not always appreciate attempts by central government to legislate forcibly for the rural community.

Hannon promoted co-operative creameries and wineries as the best means of improving the quality of colonial wine, butter and cheese. Co-operatives would also enable agricultural diversification as societies could obtain loans to invest in new kinds of factories to carry out different types of food processing. Bacon curing, jam manufacturing, and the drying and canning of surplus fruit, for example, were all upheld as potentially lucrative businesses which farmers could engage in, provided they were assured of sufficient supplies of produce, which in turn required co-operative organisation. As well as persuasion, Hannon's tactics also involved reminding

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[110] 'Hannon and Fuller on Tour', *CTW*, 11 October 1905.

agriculturists of the £5,000,000, which left the country annually in the procurement of a range of foodstuffs, which the Colony ought to be able to provide for itself. By reflecting on a sense of national shame, he intended to galvanise farmers into taking more positive action in increasing yields. He also appealed to their financial self-interest by demonstrating that reduced imports would lead to more money being generated within the Colony, thus providing greater prosperity for farmers.[111]

Despite the rhetoric and the apparent interest, co-operative schemes were not as enthusiastically embraced as Fuller and Hannon had hoped. To encourage their formation, the Progressive Government offered financial incentives. In 1905 the state borrowed £150,000 in order to offer loans to co-operatives societies on a pound for pound basis, secured by mortgage bonds. However, two years later only £85,491 had been advanced.[112] The largest beneficiaries were the five oenological ventures, which collectively borrowed £41,652. £32,125 was concurrently invested in eight dairies and creameries. These loans were repayable over 28 years at four per cent interest. The remainder of the revenue was used to help establish three fencing syndicates (chapter 6), two boring associations, the Western Province Preserving Company, the Great Camdeboo Threshing Society and a Livestock Improvement Society at Laingsberg.[113] Hannon was disappointed that no co-operatives had been established to construct factories for bacon curing or fruit processing. Nor were there any egg collection depots, reflecting an indifference to the poultry industry on the part of most farmers.[114] The rearing of chickens and hens was culturally associated with women's work, hence a source of 'pin money', rather

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[111] Such details can be found for example, in P. Hannon's circular of 9 October 1905, published in *AJCGH*, vol. 27 (November 1905) p 668.
[112] CPP, A5-1907, p iv.
[113] CA, PMO 233, F568/07: information for the government supplied by the Controller and Auditor General, Walter Guerney, August 1907.

than being regarded as a potentially lucrative form of pastoral investment.[115] This lack of willingness to actually apply for government aid in respect of these collective schemes resonated with the wariness that many farmers expressed towards receiving official loans to help develop irrigation works (chapter 4). Long term indebtedness and uncertainty about the success of new enterprises deterred applications for credit from a central government, which could ultimately bring the full force of the law to bear on those who defaulted on their redemption payments.

Moreover, the whole issue of co-operation was brought before a Select Committee in 1907, because five of the eight creameries were in financial difficulties. Based on the evidence of Hannon and Fuller, failure was attributed to over-capitalisation resulting from excessively optimistic estimates of demand, general managerial inefficiency and a lack of business acumen, which was compounded by a reliance on inferior stock, from which a consistent supply of milk could not be guaranteed.[116] Whilst acknowledging public criticism about the government's involvement in such schemes, Fuller argued that unless the state provided financial assistance, the chances of co-operative development, in which he placed so much faith, could never flourish as too many farmers lacked the capital to organise their own ventures.[117]

The formation of co-operatives was significant in defining the role of government in furthering agricultural development. Hitherto, the state's participation in rural amelioration had largely been confined to providing scientific expertise, the introduction of legislation

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[114] CPP, G47-1907 : Report of the Superintendent of Co-operation.
[115] 'Poultry: Its Rearing and Management in South Africa', *AJCGH*, vol. 28 (February 1906), pp 197-199.
[116] CPP, A5-1907: Evidence of P. Hannon pp 142-162, 263-303, 384-406 and A. Fuller, pp 107 – 141.
[117] Ibid., evidence of A. Fuller.

dealing with infectious animal diseases and the subsidising of sheep dips and weed exterminators. This was the first time that the government had actively become involved in the organisational side of commercial agriculture. Hannon, together with the viticultural expert, Raymond Dubois, did not just promote the benefits they believed would accrue from co-operatives, but played a direct role in offering advice, disseminating market information, procuring equipment for installation in cellars and dairies and overseeing production.

It was in the wine industry, in particular, that the most notable advances were made. Petrus Cillie advised the Select Committee on Co-operatives that such combinations were of little use to wealthy farmers like himself who already owned the large cellars and the modern appliances required to produce a quality wine.[118] However, they did help poorer farmers who would otherwise not have been able to improve their economic returns. Thus they went some way to fulfilling the ideological objectives laid out by Du Chiappini, in terms of seeking to tackle 'poor whiteism', albeit on a tiny scale. Louis Abrahamson, chairman of both the Wellington Winery and Creamery, set up the first viticultural co-operative in the Colony with Dubois' help in 1905. This enterprise received £10,000 in government subsidies and was supported by 13 shareholders who collectively owned nine farms. In 1906 the shareholders cumulatively provided 400 tons of grapes, which Dubois successfully blended to make a palatable white wine. At the end of the first year of trading, profits of several hundred pounds were distributed amongst the shareholders.[119] The success of this venture encouraged 15 more viticultural co-operatives to plan operations for 1908. This, Hannon believed, would result in most of the Colony's wine production being

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[118] Ibid., evidence of P. Cillie, pp 470-482.

managed on co-operative lines. He hoped that in turn this would lead to the emergence of quality vintages, with recognised brand names, which would supplant French and German wines on the South African markets.[120]

At that time, therefore, co-operatives appeared to be a viable commercial strategy for the improvement of the wine industry. As well as the Wellington venture, viticultural collectives were founded at Montagu, Stellenbosch, Tulbagh, and in the Drakenstein Valley. Johannes Beck, a leading director of the Oude Drosty co-operative at Tulbagh, believed that this form of production was the most effective means of overcoming the regional depression resulting from phylloxera.[121] Co-operatives enabled local farmers to collectively place their perishable produce at a processing plant, equipped with modern machinery, which they, as individuals, could not afford to purchase (chapter 1). Using scientific oenological techniques, viticulturists could attempt to manufacture a wine that could be branded to enhance its reputation and promote sales. The ability to sell the finished product jointly helped to raise profits by reducing the ability of wholesalers to undercut prices by exploiting local competition between individual farmers. This collective approach provided an alternative pattern of capitalist development to that of individual or monopolistic accumulation. It was consistent with the progressive ideology of advancing a more collaborative approach to rural development, which mirrored Jameson's government's attempts to encourage farmers to work together to further irrigation works (chapter 4). By providing opportunities for less prosperous farmers to participate in the revival of the oenological industry, the Progressive

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[119] Ibid., evidence of L. Abrahamson, pp 76-83; F. D. MacDermott 'Rural Cape Colony: Wellington', *AJCGH*, vol. 30 (January 1907), pp 50-59; CA, PMO 233 F568/07, information from W. Guerney.
[120] CPP, G47-1907.

Ministry was encouraging the poorer, as well as the richer settlers, to contribute to the Party's programme of agricultural regeneration.

During the first decade of the twentieth century some of the more prosperous farmers, in particular stockbreeders, financially organised their own co-operative ventures, with government endorsement. One of the most important schemes was the National Wool, Mohair and Ostrich Feather Association set up in 1906. In January of that year, Fuller had convened a conference of farmers and merchants in Port Elizabeth, which resulted in the formation of this organisation. Both anglophone and Afrikaner farmers from the Midlands and the Eastern Cape supported it. The Bondsman, Paul Michau, was elected President. Their aim was to establish local branches of the Association throughout the country, which would work towards standardising the quality and classification of fleeces for sale. [122] It was intended to attract as many farmers as possible, in order to force merchants to defray differential prices for good and poor clip instead of perpetuating the customary system of 'paying on the average' (chapter 1). By rewarding those farmers who were prepared to grade their fleeces, the Association hoped that stockbreeders would be encouraged to improve their yields, both in terms of quality and quantity, thus placing the Colony in a stronger position to contest the supremacy of Australian wool producers. Members of the Association disposed of all their produce through the organisation, in order to forestall undercutting by buyers, and to ensure that the goods sold were of a recognised standard. Certified produce received a unique

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[121] CPP, A5-1907: Evidence of J. Beck, pp 83-88. Beck was also a South African Party representative for Worcester.
[122] 'Wool and Mohair: National Co-operative Organisation', *CTW*, 17 January 1906

brand, which was intended to improve the reputation of Cape fibres on the international market.[123]

This conference was followed by a commercial crusade as supporters of the movement organised the formation of local branches. Speaking in Cradock in March 1906, Michau explained to farmers how on having seen the state of Cape wools in England 'he made up his mind not to rest until he had done all in his power to improve their clips and their methods of preparing for the market'. He believed that this organisation would be more effective than the now defunct Mohair Growers Association because it would cover the whole country, and did not exclusively represent angora breeders from the environs of Graaff Reinet (chapter 1). National rather than local co-operation in marketing was seen as the best method of encouraging improved yields through more remunerative returns.[124]

After the conference, the government tried to help farmers prepare their wool for market by appointing W. McKee as official wool expert. During 1906 McKee visited 40 districts, held 85 meetings purportedly attended by 3,502 people. He reported that many farmers seemed apathetic to change and continued to rear sheep and prepare their goods in a 'primitive' manner.[125] Nevertheless, despite this pessimistic view, 18 branches of the National Wool, Mohair and Ostrich Feather Association had been established by January 1907, supported by 360 farmers. Public sales were held at Highlands (near Grahamstown), Graaff Reinet, Mossel Bay and Caledon, reflecting the widespread dissemination of this organisation. Farmers at Highlands complained that they had only received between 9d and 11 ¼ d per pound and that buyers were still reluctant to remunerate producers of

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[123] 'Wool Conference in Port Elizabeth', *CTW*, 31 January 1906. Details also appeared in the *Bedford Enterprise* 30 January 1906 and the *MNKF*, 27 and 28 January 1906.

[124] 'Meeting of the Midland Farmers Association', *MNKF*, 26 March 1906.

a good clip. Old habits died hard, but organisers remained optimistic that collective sales of quality products would result in more profitable returns in the longer term.[126]

The emergence of this association encouraged the formation of a variety of local and national trading organisations. Walter Rubidge, for instance, used the venue of the Port Elizabeth Show in the autumn of 1906 as an opportunity to alert farmers to the difficulties involved in securing a fair price for lucerne. This issue had been brought to the fore as the military had recently rejected a consignment of lucerne hay at a certain price, forcing the seller to reduce his charges. Some farmers had earned considerable revenues from providing forage for the armies during the South African War, and some had prospered from the conflict between the Germans and the Herero and Nama chiefdoms in German South West Africa (1904-1907). However, with the conclusion of these hostilities, the fodder market became glutted through over-production and prices fell. The Lucerne Growers Association was consequently incorporated to protect the interests of fodder producers in a period of economic depression. It operated on similar commercial lines to the Wool, Mohair and Feather Association, by seeking a wide membership and encouraging farmers to sell their goods exclusively through this channel.[127] This organisation also attracted considerable support from members of both political parties, and brought together ostrich breeders from Oudtshoorn and mixed pastoralists from the Eastern Cape. Led by the South African Party representative for Oudtshoorn, Johannes Schoeman, and supported by both Rubidge and Michau amongst others, the Association hoped to foster a secure and profitable fodder industry, as a basis for growth in the pastoral sector. Farmers demonstrated that they were prepared to

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[125] CPP, G30-1907: Report of the Wool Expert.
[126] Details of the congress at Cradock, *AJCGH*, vol, 30 (February 1907), p 199-204.

challenge the role of traders whom they saw as an obstacle to their growing prosperity. Given that fodder remained a significant import throughout this period, the ability of buyers to force down prices also highlighted the consequences of poor distribution networks and the consequent satiety of local markets. In some respects this Association was set up as a means of trying to overcome some of the problems of dispersal by creating regional branches to protect the monetary interests of farmers.

(2.6) Agriculture and the Transkei Territories General Council

To some extent the ideology pertaining to agricultural development amongst the settler population was replicated in the Transkei. In particular, African delegates attending the Bunga were concerned about improving the education opportunities for blacks as the precursor to future rural development. This mirrored the arguments put forward by farmers invited to provide testimonies before the select committees on Elsenburg in 1906 and the Agricultural College in 1909 (chapter 1). In 1904 the Bunga founded an agricultural college at Tsolo. The school was established primarily to improve pastoral production because stock constituted such an important economic asset in African society. The College specialised in the scientific breeding of livestock, provided instruction in basic veterinary medicine and experimented with different types of forage. Tsolo fulfilled a role as both an educational establishment and an experiment station. Stud animals were hired out to farmers in the hope that this would encourage the rearing of more productive animals.[128] This compared with the ideology articulated by

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[127] 'Conference of Lucerne Growers', *EPH* (Farm and Stock Monthly Supplement), 30 April 1906 and 'Lucerne Growers Association'. *CTW*, 4 July 1906.
[128] TTGC Report of the Superintendent of Tsolo, Newton Thompson, 1 January 1906.

progressive farmers such as Charles G. Lee, who also saw selective breeding as a prerequisite for improving the pastoral economy.

Reports of the Resident Magistrates and the Inspectors of the Locations suggested that some Africans enthusiastically endorsed these opportunities and made efforts to improve the quality of both their animals and their produce. At Tsolo itself the authorities were struck by the extent of public interest in the scheme, and it was noted in 1906 that many valued the institution as a source of good breeding stock.[129] The Agricultural College was also appreciated in areas where schools had already been founded and had familiarised people with alternative methods of farming. In 1908 the Resident Magistrate at Matatiele, for instance, reported that:

> The Natives, as a whole are progressive and getting more and more introduced to European ways. This is noticeable in the better class of stock they breed, the large and varied crops they grow... They continue to improve themselves in education; there are no less than 44 native schools in the District.[130]

By 1909 fears of land degradation attributed to the cumulative effects of over-crowding, over-stocking and consequential soil erosion made the question of land reclamation a principal concern. The superintendent of Tsolo, J. Hughes, argued that it was essential for educated Africans to learn how to deal with these problems so that they could impart this information to their own communities in an attempt to stall further exhaustion of the land.[131] In 1909 a second agricultural institution was founded at Teko, near Butterworth, which also specialising in livestock farming.[132] These schemes were

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[129] CPP, G46-1906: Blue Book on Native Affairs, report of the Assistant Resident Magistrate for Tsolo, p 81.
[130] CPP, G24-1908: Blue Book on Native Affairs, p 35.
[131] CPP, TTGC: Report of J. Hughes, 6 February 1909.
[132] Ibid., Report of N. Thompson, February 1909.

financed primarily through local taxation although some subsidies were promised from central government.[133] The Bunga was therefore ahead of the colonial government when it came to providing education specifically geared towards the needs of the pastoral economy. Despite the arguments in support of greater instructive facilities put forward by settler farmers, no real developments in agricultural education emerged in the decade preceding Union, apart from in the Transkei.[134] The creation of both Tsolo and Teko emphasised the commitment, on the part of progressive agriculturists who formed the African political élite, to expanding the adoption of modern agricultural techniques. The rationale of organisers like Hughes also implied that underlying this idea of rural amelioration, was the gradual disappearance of traditional Xhosa customs in which cattle had a social as well as an economic function within the community. If breeds of animals were improved and pastoral yields were enhanced, this should obviate the economic need for the accumulation of cattle, and would thus help to curb the extent of erosion and veld exhaustion. Pastoral progressivism in the Transkei mirrored opinions in the Cape where it was also postulated that the rearing of a smaller number of quality stock was preferable to protecting a grazing myriad of inferior beasts (chapter 4).

In addition to agricultural education, the Bunga was also keen to develop financial facilities to help local people to increase the output from their land. This echoed concerns articulated by settler farmers who saw the development of favourable credit facilities as vital for the

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[133] Report of the TTGC Annual Meeting, January 1904. In 1904, it was estimated that the cost of setting up Tsolo would be approximately £5,000. Details of the exact sources of revenue and the extent of the government contribution were not revealed.
[134] Lack of money forestalled the creation of new agricultural colleges in the Cape. The only real initiative came from Rhodes University, which organised lectures on farming in the vacations of 1907 and 1908. These were given by university lecturers such as J. Duerden and progressive farmers such as C.G. Lee. 'Vacation Courses in Agriculture', *AJCGH*, vol. 31 (September 1907), pp 309-326; CA, AGR 621, F120: J. Duerden to the Director of Agriculture, 12 March 1908.

improvement of the rural economy (chapter 1). The councillor from Tsomo, S. Ntloko stated that:

> If the Natives were to progress then it was necessary that they should fence their agricultural lands, be possessed of good farming implements and good seeds, and to get these things they required money, and that was what land banks were for.[135]

Ntloko explained that there were many black agriculturists in the Transkei who had bought land worth over £2,000. These farmers intended to develop their estates and operate them on commercial lines, but were hampered by a lack of surplus capital and the opportunities to borrow money at reasonable rates of interest. This attitude to the land, Ntloko emphasised, constituted proof that Africans were not primitive, uncivilised people. He refuted suggestions by fellow councillors that their neighbours were unlikely to repay loans because they were untrustworthy, idle or backward. Ntloko's arguments won the support of the majority of the Council. A resolution was passed authorising the establishment of a credit bank to lend money to those wishing to improve their properties. The desire to invest in commercial land holding was therefore not unique to European settlers. Instead it constituted a concept of progress in which Africans who identified themselves as 'enlightened' and progressive also wished to engage.[136]

(2.7) Conclusion

The first decade of the twentieth century was, in many respects, an important one in defining the role of the state in furthering

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[135] 'The Creation of Credit Societies', Report of TTGC, 1909, p lxiv.
[136] Ibid., pp lxiii - lxvii

agricultural production. In the Transkei the Bunga demonstrated its intention to improve the educational and experimental facilities pertaining, in particular, to the pastoral economy in the districts which fell under its jurisdiction. Throughout the Colony the pursuance of science continued to stand at the forefront of rural development strategies. Until the middle of the decade veterinarians worked, with mixed success, to improve and extend the range of available vaccines, whilst Gilchrist continued to chart the surrounding seas. More attention was paid during this period to the amelioration and diversification of agrarian production than had hitherto been the case. The recruitment of Raymond Dubois and Eric Nobbs constituted a specific response to problems facing the viticultural and arable sectors of the economy. Farmers might have been disappointed that only two experiment stations were founded during these years, but at least a start had been made. Nobbs's scheme for 'co-operative experiments' was indicative of a closer liaison between state and farmers and the publication of results in the *Agricultural Journal* helped to disseminate information pertinent to the conditions of the Cape, thus making it more relevant to a wider agricultural audience. This collaboration can be contrasted with the more ambivalent relationship between some farmers and official scientists over veterinary initiatives and the development of irrigation (chapter 4).

The development programmes of the Progressive Ministry were sometimes hampered by the unwillingness of agriculturists to respond to their proposals. Whereas there was strong support for ventures emanating from farmers themselves, such as the creation of a stud book and the National Wool, Mohair and Ostrich Feather Association, many remained sceptical of government projects, which directly affected the day to day running of the farm. This was demonstrated in the public reaction to the idea of state-aided co-operatives. Attendance figures at Hannon's meetings indicated an interest in the

principle of a collective approach to farming especially in the Western Cape, however, few ultimately took up the offer of government advances. Freedom from official supervision, together with a determination to avoid indebtedness to the state, were still integral characteristics of rural culture even amongst those who saw themselves as essentially progressive. Yet at the same time, the creation of five co-operative wineries in the Western Cape indicated the potential success of such ventures as a particular form of capitalist production, which resonated with the more collective approach to rural development that this government was attempting to generate.

Jameson's ministry also took innovatory steps to improve products and expand market opportunities. By proposing legislation dealing with the adulteration of seeds and fertilisers, as well as wines and spirits, the state was trying to protect the interests of farmers and consumers by introducing new forms of quality controls, which regulated agricultural output. The government also played an active role in facilitating the expansion of the fruit trade as a means of diversifying commercial growth. Rural reconstruction was concurrently associated with an endeavour to improve the functioning of the Agriculture Department. The creation of the position of Director of Agriculture and a Chief Conservator of Forests represented greater centralisation and co-ordination in the operations of these sub-departments and reflected an ideology of 'national efficiency'; a contemporary hallmark of progress.

CHAPTER III

Political Entomology:

The Insectile Challenge To Agricultural Development in the Cape

Increasing agricultural production in the Cape was, to a great extent, dependent on the ability of scientists to devise means of dealing with injurious insects, which destroyed crops and propagated stock diseases. The nineteenth century saw a rise in entomology as an applied science that could be used by both governments and individuals to combat deleterious challenges to agrarian and pastoral production. In 1895 the American Charles Pugsley Lounsbury became the Colony's first official entomologist. The term 'political entomology' has been chosen to emphasis the fact that entomology was not just a study of arthropodous life cycles pursued solely in the interests of scientific discovery. Entomologists at the Cape were professional civil servants. Their role was largely decided by the economic needs of the ruling élite and, as a corollary, the nature of their work and its impact upon society was political in its outcome.

This chapter focuses specifically on Lounsbury's career, which is used as a prism through which to evaluate certain interesting aspects of the Cape's political, economic and scientific developments of the early twentieth century. Entomologists played an important role at the interface between the government and the agricultural community and their influence was an example of the growing centralising and supervisory powers of the colonial government. The appointment of an official entomologist was also indicative of an increased concern, on

the part of politically active farmers, to see the adoption of the latest scientific methods to improve production.

The growing importance of this particular branch of science was not unique to the Cape and was reflected in the emergence of entomological networks between various anglophone settler states. From Cape Town Lounsbury maintained close links with the country of his birth and carried on extensive correspondence with American entomologists who both provided information for, and learnt from, the insect studies pursued in the Colony. Much of Lounsbury's early work involved dealing with enemies of the fruit industry. Since California was one of the major fruit producing states in America, Lounsbury communicated with leading entomologists there, adapted their methods and introduced local species to the Cape environment. Links were also created with Australia. Lounsbury's efforts to eradicate the fruit fly brought him into contact with George Compere, another American entomologist, employed by the government of Western Australia. The Cape had a Mediterranean climate similar to that of California and the littoral regions of Australia, which promoted parallels in relation to the kind of crops that were introduced, the insects that flourished and the agricultural economies that could be developed. Lounsbury's later investigations into the life cycles of ticks were reported in the American *Journal of Economic Entomology*.[1] Both South Africa and the United States shared a fear that their valuable livestock industries could be decimated unless ticks, and the diseases they transmitted, could be successfully controlled through the powers of western science. Lounsbury's perception as to how entomology should be defined and pursued owed much to his American experiences.

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[1] For example W. Hooker's reference to Lounsbury's work in the (American) *Journal of Economic Entomology* (hereafter *JEE)*, vol. 1 (February 1908), pp 34-51 and pp 65-76.

(3.1) The Recruitment and Rhetoric of an Economic Entomologist

Entomology as an applied science emerged in the last part of the nineteenth century. In the eighteenth and early nineteenth centuries entomology was regarded as little more than an amateurish fetish for collecting insect specimens, especially the more attractive lepidoptera. In South Africa the start of entomological taxonomy has been credited to the appointment of Roland Trimen who, as curator of the South African Museum in Cape Town, published the Colony's first catalogue on butterflies in 1862. Coleoptera were popularised in a publication by his successor at the museum, Louis Peringuey.[2] In 1889 Eleanour Ormerod, the Honorary Consulting Entomologist to the Royal Agricultural Society in Britain, produced the first general text on South African insects entitled *Notes and Descriptions of a Few Injurious Farm and Fruit Insects of South Africa*. Although the study of systematics was an important first step in observing the insects of the Cape, entomology had not branched out into the more sophisticated, laboratory-based research into life cycles and ecological systems which countries like the United States were promoting as pivotal in the fight against noxious insects. Nor had the Cape developed an extensive use of chemical compounds to combat insects. In his first official report Lounsbury expressed amazement at the extremely conservative spirit of Cape agriculturists, which he attributed to rural isolation and a lack of contact with the modern world.[3]

The absence of any recognised indigenous research into entomological preventatives and remedies led to drastic and consequently unfavourable measures being enacted in times of crisis.

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[2] A. Janse, 'Glimpses of the Development of Entomological Science in South Africa', *Journal of the Entomological Society of South Africa* (hereafter *JESSA*), vol. 3 (30 September 1940), pp 4-5. Peringuey's pamphlet appeared in 1885.
[3] CPP, G25-1896: Report of the Government Entomologist, pp 26-30.

This was clearly demonstrated in the way the government dealt with phylloxera, a microscopic parasite that invaded many vineyards in the Western Cape from 1886 (chapter 1). Economically and politically this affected the fortunes of some of the most influential Afrikaner families who had developed the oenological industry in the vicinity of Paarl and Stellenbosch since the early days of Dutch East India Company rule. The government turned to Louis Peringuey for advice. Peringuey was an expert in Linnaean taxonomy, but he had no biological understanding of how the world of arthropods functioned. His solution was to destroy infected vineyards by fire, a measure which, in the words of Lounsbury, proved 'so utterly unsuccessful and provoked such intensive criticism of the government, that it is no wonder Peringuey was unpopular with the farmers'.[4] To try to discover methods of dealing with insect plagues that were both less calamitous and less contentious, the Department of Agriculture subsequently looked overseas for an 'applied' entomologist.

The Cape government turned to the United States to furnish them with this expertise because of America's reputation as a world leader in insect research. Here entomology had already evolved from taxonomical classification into what American scientists designated 'economic entomology'. This referred to the application of science to control insectile pests that threatened the world's food supplies. The head of the Entomology Department, Leonard Howard, who was responsible for selecting Lounsbury for the Cape, argued that the employment of government entomologists was a direct response to national economic catastrophes. In America the introduction of agriculture to the Plains and the Western Territories made this area vulnerable to pests such as the Mountain Locust, which had been able to decimate crops because of an absence of natural enemies to limit its

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[4] C. P. Lounsbury, 'The Pioneer Period of Economic Entomology in South Africa',

numbers.[5] The latter part of the nineteenth century saw an intense drive by the American Department of Agriculture not only to settle people on the soil, but also to turn the United States into a major exporter of foodstuffs. Legislation such as the 1887 Hatch Act, which enabled each state to establish its own experiment station, provided new opportunities for entomologists to study insects within local environments. America thus became the centre for biological and chemical campaigns against insects.[6] These advances meant America soon emerged as an exporter of entomologists to both Europe and various settler colonies.

Lounsbury himself was trained at Amherst Agricultural College and Experiment Station in Massachusetts and accepted the post of entomologist in the Cape at the age of 23. Howard explained that this position had been difficult to fill due to the low salary offered by the Cape government, which only a young man with few financial commitments could afford to accept.[7] However, Lounsbury was also inspired by the opportunities southern Africa provided for initiating his own programme of research. In 1895 Lounsbury was just an instructor at Amherst. The historians Paolo Palladino and Charles Rosenburg have argued how, paradoxically, in spite of theoretical opportunities for scientific investigation, individual research was in practice limited due to financial constraints and the power of farmers and legislatures to determine the agenda. Much of the work at these stations was routine, with a great emphasis on the demonstration of insecticides and the analysis of soils and fertilisers.[8] Alan Marcus has

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JESSA, vol. 3 (30 September 1940), p 9.

[5] L. O. Howard, *A History of Applied Entomology: Somewhat Anecdotal* (Smithsonial Miscellaneous Collection, 1930), pp 1-4.

[6] P. Palladino *Entomology, Ecology and Agriculture: The Making of Scientific Careers in North America 1885-1985* (Lancaster, 1996), chapter 1.

[7] L.O. Howard, *A History*, p 373.

[8] P. Palladino, *Entomology, Ecology and Agriculture*, chapter 1; C. Rosenburg, *No Other Gods: On Science and American Social Thought* (Johns Hopkins University Press, 1976), chapter 9.

described Amherst as merely a 'state chemistry shop' where tedious pedological testing was its primary function.[9] For an individual who sought a more exciting career, the absence in the Cape of established economic entomologists with whom to vie for funding and attention, must have seemed an attractive proposition. Lounsbury was always proud of the fact that he was the first official entomologist in Africa and considered his appointment indicative of the willingness of the Colony to adopt progressive ideas.[10] Howard noted that 'from the very beginning Lounsbury had great plans'.[11] According to Lounsbury the Cape offered exciting challenges because the ravages that insects were able to inflict on crops were much greater than in many other countries, due to the great variety of arthopodal species and the almost total absence of scientific controls to check their propagation.[12]

Together with his American experiences, Lounsbury brought to the Cape the cultural language of 'economic entomology'. He self-consciously saw his role as the reordering of nature for the purpose of material gain. He described his profession as 'the study of insects injurious to the agricultural and other interests of man with a view of discovering methods for preventing or checking their ravages'.[13] Beneficial insects were to be encouraged and injurious ones eradicated. Lounsbury dismissed popular notions that insects were nothing more than pests. Underlying his professed belief was a Social Darwinist impression of the world in which he foresaw that the countries that could harness the powers of science would have a distinct advantage over those that could not.

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[9] A. Marcus, *Agriculture Science and the Quest for Legitimacy: Farmers, Agricultural Colleges and Experiment Stations 1870-1890* (Iowa State University Press, 1985), chapter 4.
[10] C.P. Lounsbury, 'The Pioneer Period' p 9.
[11] L. Howard, *A History*, pages 372 and 373 respectively.
[12] CPP, G25-1896, pp 26-30.
[13] Ibid., p 25.

Such ideas were widely articulated in Europe, North America and the settler colonies during this period. Darwin's biological and evolutionary thesis about the survival of the fittest and the dominance of those species that could best adapt to their physical environments was transposed into an interpretation of the human world. Sociologists in Europe and American constructed a hierarchy in which the 'anglo-saxon' race was positioned at its pinnacle. They defended this analysis on the presumption that so-called 'anglo-saxon' states, such as America and Britain, were the most advanced in terms of industrial and democratic development. Progress was attributed to the growth of knowledge through science, which constituted 'proof' that such societies had been the most effective at mastering their environments. The inverse of this was the perception that hierarchies could be overturned, precipitating fears that communities could degenerate if they did not continue to progress. Underlying these ideas lay insecurities about the longevity of economic success in the face of global competition.[14]

Lounsbury himself expressed these tensions in some of his writings in which he argued that the adoption of scientific methods was essential to ensure future food security and combat commercial rivalry from other countries. He explained to farmers and politicians that their ability to control insects differentiated modern, scientifically advanced societies from the backward and the primitive. Agriculturists and countries that could overcome nature's obstacles would prosper, whereas those who could not would suffer. He wrote:

> whatever essential part they play in the great scheme of nature as a whole, however, insect pests and plant

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[14] R. Hofstadter, *Social Darwinism in American Thought 1860-1915* (University of Pennsylvania Press, 1945); G. Daniels, *Science in American Society: A Social History* (New York, 1971); G. Jones, *Social Darwinism and English Thought* (Brighton, 1980); M. Hawkins, *Social Darwinism in European and American Thought 1860-1945'* (Cambridge, 1997).

diseases are in some respects factors that may become of considerable profit to many farmers, individually or collectively. By means of these troubles, either through their absence or by his successful treatment of them, the farmer often holds or secures a decided advantage over his competitors..... The harder the conditions for success become, the more will the thrifty 'practically scientific' farmer prosper at the expense of the unskilled haphazard one.[15]

To try to make his assumptions appear more convincing, Lounsbury applied these arguments to specific sectors of the rural economy such as horticulture. The Cape could, and had to, compete with the rest of the world, he argued in 1905. In particular he saw Argentina as the most likely competitor for the European fruit trade. Argentina had the advantages of cheaper land, more fertile soils, a heavier and more even distribution of rainfall and a good transport system connecting agricultural centres of production with foreign markets. At the same time, however, there were disadvantages facing Argentinean horticulturists, he claimed. Not being an 'anglo-saxon' nation, there was 'less average intelligence amongst growers', education was poor, there was a lack of expertise and almost no encouragement from the government. Argentina was also politically unstable, blighted by the 'revolutionary tendencies of the people'. Nevertheless, Lounsbury warned, many of these problems could be overcome in the future. Then, due to the natural climatic advantages that this part of South America enjoyed over southern Africa, the former could become the stronger economic power. Argentina had its pests but they would be conquered. It was up to the Cape to take the

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[15] C. P. Lounsbury, 'Reflections on Pests in General', *AJCGH*, vol. 16 (18 January 1900), pp 94-95.

initiative now, profit from its scientific advances and corner the northern markets before rival countries did so.[16]

These ideas mirrored the concerns of some agricultural politicians who, after the South African War, questioned whether the Cape was falling behind other countries both in terms of internal development and the securing of external markets (chapter 1). The furtherance of entomology in the first decade of the twentieth century was consequently linked to the quest for rural self-sufficiency. Dealing with frugivorous insects was essential if farmers were to succeed in establishing a fruit industry on a lucrative export basis (chapter 2). Competition with Australia for dominance of the world's wool trade meant that mitigating the impact of disease carrying insects was vital for the protection of stock numbers in the Eastern Cape.

The remainder of this chapter focuses on the scientific exploration and subsequent introduction of prophylaxis and controls for three such threats: fruit pests, ticks and locusts. It also considers the extent to which the Cape was innovatory in the nature of its scientific discoveries. Lounsbury was eventually aided in his work by the appointment of the American entomologist Charles Mally who was based in Grahamstown from 1899.[17] This was indicative of the gradual expansion of the state bureaucracy and the growing influence of its scientific personnel.

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[16] C.P. Lounsbury, 'Fruit Culture in Argentina', *AJCGH*, vol. 27 (August 1905), pp 192-210.
[17] CPP, G36-1900: Report of the Government Entomologist, p 6.

(3.2) Fruit Pests – The Adoption of Insecticides and Entomological Controls

In his reminiscences Lounsbury specifically recorded how his position had been created for the service of the Western Board of Horticulture, which had been established in the early 1890s to promote a co-operative approach to political lobbying and commercial development.[18] Its members included prominent wine and fruit producers such as Charles Kohler (chapter 2), as well as John X. Merriman, who had purchased the phylloxera ridden farm of 'Schoongezicht' in 1892 in order to cultivate fruit for the export market.[19] Other participators included Harry Pickstone and Percy Malleson, managers of Rhodes's Fruit Farms and the Cape Orchard Company respectively. These individuals recognised the need for scientific application and pest controls to further commercial production.[20]

The actual contribution of the Entomology Department to the development of the fruit industry consisted of trying to extirpate existing pests and preventing the introduction of alien, and potentially dangerous, insects into the country. Many prevailing species in the Cape such as scale insects and codling moth, Lounsbury reasoned, had originally come from abroad. The lack of natural enemies in their new environment had allowed these arthropods to propagate to an injurious extent so that the balance of nature had become disturbed. Nature's equilibrium, Lounsbury argued, had to be restored through a combination of biological and chemical strategies.[21] Both methods

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[18] C.P. Lounsbury, 'The Pioneer Period,' p 14.
[19] P. Lewsen, *John X. Merriman: Paradoxical South African Statesman* (Yale University Press, 1982), pp 154-155.
[20] C. Aucamp 'The Establishment and Development' and 'The Cape Orchard Company'.
[21] CPP, G25-1896.

were developed in tandem, but increasingly the emphasis fell on the latter method of control.

Biological measures were initially regarded as the more desirable form of ecological regulation because they appeared to be more in keeping with the natural environment, and if successful, would be cheaper in the longer term. Since 1888 entomologists working in California had been experimenting with the introduction of the Australian beetle *Vedalia cardinalis* in an attempt to bring *Icerya purchasi* (cottony cushion scale) under control.[22] This insect damaged the bark and foliage of citrus trees rendering them less able to bear healthy fruit. The resounding success of this particular importation encouraged further acclimatisation programmes in America as well as experiments in the Cape and Australia. In 1892 the fruit farmer A.J. Louw returned to the Cape from California with a consignment of *Vedalia cardinalis* to tackle the same scale insect in the Colony, where it was known as dorthesia. Further supplies of this beetle were imported by the Agriculture Department for distribution to farmers at a cost of 10 shillings per colony.[23] In 1900 alone 22 consignments were brought in from America.[24] However, it was difficult to reproduce the ladybird in sufficient quantities to meet demand, thus limiting the efficacy of this strategy.

Lounsbury's own position on biological warfare was somewhat ambivalent. As early as 1895 he reflected on the assumption that the successful introduction of *Vedalia cardinalis*, in both America and the Cape, was likely to have been a singular victory in the struggle against orchard pests. Attempts in California to acclimatise other varieties of beetles and parasites had failed and many entomologists there were

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[22] I. Tyrell, *True Gardens of the Gods*, chapter 9.
[23] CPP, G45-97: Report of the Government Entomologist, p 18.
[24] CPP, G18-01: Report of the Government Entomologist, p 6.

now recommending the exclusive use of insecticides.[25] Lounsbury shared this scepticism, yet he was prepared to continue this work in view of the potential long-term benefits. Ecological transfers also furthered scientific links between anglophone settler states. Much publicity was afforded in the *Agricultural Journal* to his collaborative effort with George Compere and Claude Fuller, entomologists working in Western Australia and Natal respectively, to introduce enemies of *Ceratatia capirata*, or fruit fly, which lived primarily on peach trees. The *Straphylinid* beetle and *Icehneumon* wasp were reputedly keeping this pest at bay in the orchards of Bahia in Brazil. An expedition to South America followed in 1905 but the beetle was nowhere to be found, whilst the wasp puparia did not survive the voyage back to South Africa.[26]

Although attempts to introduce alien insects continued sporadically after this costly yet abortive episode, biological transfers became less prominent both from a financial and a scientific perspective. Lounsbury attributed the failure of acclimatisation to a number of factors. In particular he felt inadequate research had been carried out into the life cycle and habits of ladybirds and other insects that were imported into the Colony. Many of these arthropods came from America. Here Leonard Howard opposed such schemes, regarding them as a waste of time and resources. Howard encouraged American entomologists to concentrate on chemical rather than biological campaigns, thus undermining the credibility of this line of research in the United States.[27] The collection of species from their indigenous environments was a haphazard affair, often carried out by people who lacked the necessary expertise or funding to make the scheme viable. Insects usually died during voyages due to inadequate

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[25] CPP, G25-1896, pp 9-12.
[26] 'Natural Enemy of the Fruit Fly', *AJCGH* , vol. 26 (January 1905), pp 84-87; *AJCGH*, vol. 27 (October 1905), p 467-468.

food supplies and temperature controls, or else if colonies did survive, their numbers were too small to reproduce successfully in their country of introduction.[28]

The failure rate of biological methods enabled Lounsbury to promote what he believed was the most effective way of dealing with noxious insects; namely extermination with insecticides. Palladino has argued that in America the use of sprays was consciously promoted as an emblem of progressive farming. In 1903 the *United States Department of Agriculture Farmers' Bulletin*, claimed that 'the more progressive and business-like apple growers are the staunchest advocates of spraying, and their efforts are uniformly successful... spraying always brings about greater efficiency and reduction of expenses'.[29]

Lounsbury tested American insecticides for their efficacy on Cape arthropods. Experiments were also carried out to observe the effects of these compounds on Cape vegetation. It was soon discovered, for instance, that the recommended strength of arsenical solutions used in the United States against codling moth would destroy the foliage of local fruit trees if applied in such a concentrated form. Just as the Cape's veterinarians had to adapt imported vaccines to suit colonial conditions (chapter 2), so too did the government entomologist have to modify foreign pesticides. Variations in climate, vegetation and the habits of insects in diverse environments meant that American compounds were not universally applicable.[30] Nevertheless, Lounsbury was reliant on American precedents as the basis from which to carry out his own research. In his early years in the Colony, Lounsbury pursued his American networks and frequently

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[27] CPP, G18-1901, pp 22-39.
[28] CPP, G31-1909: Report of the Government Entomologist, p 64-65.
[29] Quotation taken from P. Palladino, *Entomology, Ecology and Agriculture*, p 30.
[30] CPP, G25-1896, pp 25-26.

sought the advice of H. J. Webber, Director of Vegetable Physiology at the Subtropical Laboratory in Florida. Webber recommended the use of sulphur to deal with *Mal di gomma* which destroyed orange trees and resin washes to kill scale insects in the larval stage.[31] The patented compound Paris Green formed the basis of Lounsbury's own recommended toxicant, arsenate of lead. This became the most popular insecticide in the first decade of the twentieth century and was used to combat species such as the fruit fly, prevalent in the Eastern Cape. [32] In this region, Charles Mally claimed that its adoption, when mixed with sugar to act as an attractive bait, had reduced the infestation on treated peach trees from 50 per cent to 1 per cent between 1908 and 1909. [33]

Once the initial experiments had been carried out and suitable compounds had been concocted, Lounsbury believed it was the duty of government scientists to go out into the field, not only to experiment but also to instruct farmers on how best to protect their orchards. In his reminiscences he recorded how the Agriculture Department in the 1890s was a formal, under-funded 'clerical establishment, which seemed to try to hold aloof from farmers'.[34] In an attempt to dispel this unflattering image, Lounsbury travelled thousands of miles on his bicycle to address 'small gatherings of fruit growers' and instruct them how to prepare and apply 'resin-wash, lime-sulphur-salt, whale-oil soap, and other insecticides then recommended in Californian bulletins'. [35]

Not everyone, however, was prepared to endorse the use of chemicals. Some believed that cyanide used for the fumigation of

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[31] CA, (Entomology Department) ENC 1/3/2. For example C.P. Lounsbury to Webber 16 June 1896; Webber to Lounsbury, 26 August 1896.
[32] C.P. Lounsbury, 'The Pioneer Period' p 14.
[33] '"Mally" Fruit Fly Remedy' *AJCGH*, vol. 35 (November 1909), pp 578-581.
[34] C.P. Lounsbury, 'The Pioneer Period', p 13.
[35] Ibid., p 14.

imported fruits, plants and orchards was detrimental to human health. Protective fumigation covers, as used in California, were not always widely available in South Africa. Poorly applied, these poisons had the potential to injure more than the pests they were supposed to extirpate.[36] Some people, Lounsbury once told an audience in Paarl 'oppose [d] the destruction of insects by spraying and fumigating with the plea that such measure are unjustifiable, because quite unnatural'. 'Nonsense' was his riposte! 'Everything about a modern fruit tree is unnatural'.[37] Agricultural itself had altered the natural environment. By harnessing the powers of science Lounsbury believed further modification would be justifiable if it were economically advantageous. His early reports revealed exasperation at the overall reluctance of farmers to introduce these new methods.[38] Yet tardiness could be attributed to more than innate conservatism. Pesticides had been used in America since the 1870s, but culturally they had not become an established feature of Cape farming. Lounsbury himself was aware that the cost of chemicals and the accessories, which had to be imported, was prohibitive for many smaller farmers.[39] Commercial producers who cultivated fruit for a wide market were the only agriculturists for whom it was economically viable to invest in spraying and fumigation equipment. Scientific developments were thus geared to meet the needs of a comparatively wealthy élite.

However, as the first decade of the twentieth century progressed and more environmentally suitable chemicals appeared this method of control became more widely accepted. The dramatic increase in the colonial fruit trade after the South African War encouraged more farmers to develop horticulture on a commercial basis. The overall

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[36] Ibid., p 15.
[37] C. P. Lounsbury 'Insect Pests Affecting Fruit Trees', *AJCGH*, vol. 29 (October 1906), pp 502 – 507.
[38] G25-1896, pp 30-31; G45-1897, p 15; G49-1899, p 2.
[39] CPP, G25-1896, pp 30-31, 41-46.

failure of acclimatisation projects ensured chemicals emerged as the only viable means of controlling injurious insects. Local fruit growers' associations endorsed their usage and attitudes gradually changed. Former sceptics began to recognise that science could provide some benefits for farmers. Discussing Mally's arsenate of lead and sugar solution, one Midlands farmer revealed:

> In Graaff Reinet – where never much value has been set on the theories and direction of government experts, their theories sometimes seeming to be so mountain high and of such a spendthrift nature that they have no attraction for these men who have seen the better times of old – they have obtained good results by bringing into practice the theory of Mr Mally by making experiments in the spraying of peach trees with arsenate of lead and black sugar against the peach fly. [40]

Successful use of pesticides did much to increase the credibility of Cape entomologists in the minds of the agricultural public and encouraged more and more farmers to pursue these methods.

Credibility in the work and arguments pertaining to entomology were vital if Lounsbury were to obtain government support to introduce the regulations he felt were necessary to protect orchards and nurseries from infestation by either indigenous or alien species. Although compulsory measures, such as the compulsory dipping of small stock, were being pursued in the Cape, such regulations were often opposed by sectors of the farming community and were thus difficult to enforce (chapter 1). Government officials, such as Lounsbury and members of the veterinary department did, however, begin to forge legislative controls to protect the agricultural economy despite some vociferous opposition. Entomological statutes can thus be located within the wider picture of an increasingly interventionist

state. In his first report of 1896 Lounsbury emphasised the necessity for import restrictions to try to ensure foreign pests would be unable to obtain a future foothold in the Colony.[41] This was reiterated the following year together with a suggestion that nurseries should be cleared of existing pests to prevent further propagation.[42] However, due to the hostility of some farmers such legislation was delayed. In the meantime, he warned horticulturists 'with each year of no effective legislation the dissemination of pests and diseases of orchard trees and fruits increase and become more and more difficult to check'.[43]

In September 1904 a law was finally passed aimed at preventing the introduction of insects and parasites through imported plants. This formed part of the Progressive Government's attempt to promote the fruit industry. Under the new measures, importers had to obtain a licence to trade. The varieties of plants, which could be introduced were limited to 'uncommon trees not procurable in the country and not related to native or cultivated trees of importance'.[44] Newly established orchardists who were trying to launch a business in horticulture expressed opposition to this statute. They complained that they would have to pay more for fruit trees as they would no longer be able to import the cheap, surplus nursery stock, which was often sent to South Africa at the end of the European fruit season. Lounsbury, however, claimed that many of these imports were continually infested with 'living pernicious scale'.[45] Such plants were supposed to be burnt, but without compulsory legislation this was impossible to enforce. This statute aimed to put an end to this laxity.

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[40] 'Mally's Fruit Fly Remedy: A Brilliant Success', by P. S. Du Toit, Secretary of the Graaff Reinet Fruit Growers Association. *AJCGH*, vol. 36 (February 1910), p 146-147.
[41] CPP, G25-1896, pp 14-16.
[42] CPP, G45-1897, pp 23-28.
[43] CPP, G18-1901, p 40.
[44] CA, ENC 1/4/1: Government circular 1 February 1907.
[45] C. P. Lounsbury, 'The Pioneer Period', p 23.

Plant importation was to be regulated just as the trade in livestock had already been controlled in an attempt to curb the introduction of alien epizootics.[46] The eventual enactment of this legislation, despite opposition, reflected an increase in official concern about the detrimental effects insects could have on the arable economy and also indicated growing public support and confidence in the work of the government entomologist.

A second controversial piece of legislation was the Nursery Inspection and Quarantine Bill. The propagation of fruit trees had increased steadily in the 1890s due to the growing interest in horticulture. The aim of the bill was to protect progressive fruit growers by legislating for a ban on sales of all stock from infected nurseries. In 1905, after seven years of campaigning, the bill was finally passed. The efficacy of chemicals such as hydrocyanic acid gas to fumigate fruit trees had been proven, and its compulsory usage for cleansing nurseries was effectively being endorsed by this statute.[47] Lounsbury blamed the Afrikaners for the delay in enactment, accusing them of being backward and standing in the way of progress. He later remonstrated that:

> skilled, progressive nurserymen were few in those days. The propagation of fruit trees had long been, as a whole, a mere sideline to some other occupation, but though a sideline it was profitable and was clung to tenaciously. Interspaces between rows of pest-ridden orchard trees were the customary propagation grounds. The proprietors were chiefly Boers, and the father and grandfathers of some of them had grown and sold trees as they did.[48]

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[46] Act 27 of 1893: To Prevent the Spread of Contagious and Infectious Diseases amongst Cattle and Other Animals.
[47] Details of Lounsbury's fumigation experiments can be found for example in CPP, G45-1897, pp 14-17.
[48] C.P. Lounsbury, 'The Pioneer Period.'

Afrikaners, Lounsbury believed, viewed this law as a plot to force them out of business. In a sense these nurserymen were right. The Act did have the potential to destroy livelihoods. The archival evidence suggested that Lounsbury was an ardent enforcer of these regulations.[49] Over the next five years 14 volumes of correspondence accumulated with regard to this legislation. All nursery proprietors had to fill in forms detailing their operations and were subject to annual inspection by entomological assistants. Only if the report were favourable would the nursery be licensed to trade; otherwise individuals had to meet the bill for quarantines and fumigation. Satisfactory nurseries were publicised in the *Government Gazette*. Those that were not listed were, by implication, purveyors of unhealthy plants and the survival of their enterprise was thus undermined.

Lounsbury's readiness to associate agricultural backwardness with the activities of poorer backveld Afrikaner farmers echoed the views frequently articulated by progressive anglophone stockbreeders who tended to accuse this sector of society of adhering to retrogressive practices which allowed the perpetuation of diseases such as scab (chapter 1). Parallels can also be drawn between the nursery statute and the Scab Act introduced in the previous decade. The Western Board of Horticulture endorsed nursery legislation as vital for safeguarding the interests of progressive fruit growers. Likewise, progressive stockbreeders from the Midlands and the Eastern Cape had pushed for compulsory dipping in order to protect their own clean animals from infection. The small nurserymen, like the poorer small stock farmers of the Karoo or the north western Districts, often remained dubious about the ability of science to improve their financial returns. In this case, fumigation would be costly to

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[49]CA, ENC 1/1/1 – 1/1/14.

implement and official inspection was tantamount to empowering the state to undermine their livelihoods to the benefit of more prosperous commercial farmers.

The future security of the fruit industry was on occasions the cause of severe friction between farmers in the western and eastern regions of the Colony. One of the most contentious issues of the first decade of the twentieth century was how to deal with *Carpocaps pomonella*, popularly known as codling moth. This insect was endemic in the Western Province and it had propagated as far east as Graaff Reinet. The larva ate the fruit whilst the adults damaged the bark of apple, pear and quince trees. Arsenical sprays were recommended but since there was no legislation to ensure compulsory fumigation of orchards, the pest could propagate unchecked. The Eastern Board of Horticulture, in their determination to keep this area codling free, demanded a ban on the movement of all such fruit from the west to the east.[50] Government support was sought for the creation of a cordon sanitaire effectively placing under quarantine the orchards of the Western Cape. Fearing loss of business, their western counterparts protested. As a result of the acrimonious debate that ensued, the Progressive Government came out on the side of the eastern farmers. A proclamation was issued in 1905 banning the importation of apples, pears and quinces into the Eastern Cape by land or sea.[51] Four years later the Transvaal Government ordered the inspection of all fruit from the Cape, specifically to search for codling moth.[52] Cases of unsatisfactory fruit were destroyed. These internal quarantine zones and restrictions on the movement of agricultural produce once again mirrored the regulations already imposed against animals suspected of carrying specified diseases. The fear of

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[50] The Eastern Board of Horticulture was set up in 1898.
[51] 'Departmental Notices', *AJCGH*, vol. 28 (January 1906), pp 142-143.
[52] 'Rejection of Cape Produce by the Transvaal', *AJCGH*, vol. 34 (April 1909).

contamination from fruit pests was an emotive issue and became a major factor in defining the confines of government intervention.

The only alternative to quarantine restrictions was the introduction of legislation to make the cleansing of orchards obligatory. This idea was discussed by both the Western and Eastern Boards of Horticulture at the turn of the twentieth century. Whereas eastern farmers voted in support of a stringent orchard pests bill, their western counterparts were divided. Charles Kohler, the chairman of the Western Board of Horticulture, argued that compulsory legislation would divide the country in the same way as the scab laws had in the 1890s (chapter 1).[53] These attitudes suggested that even amongst progressive agriculturists there was intense debate about the question of compulsion and the extent to which the state had the right to intervene in agricultural practice as carried out on individual farms. It also demonstrated the significant role that farmers' lobbies played in the introduction of rural legislation. Abandoned in 1900, the idea of an orchard pests bill was not revived, even in peace time, because of a lack of consensus both between the two boards and within the boards themselves. Without the support of a substantial number of influential farmers, the confidence or ability of the government to extend the scope of its regulatory powers was contained.

(3.3) A Plague of Ticks – Pioneering Research into Pastoral Entomology

In 1895, when Lounsbury arrived in the Cape, there had been very little empirical research carried out in the Colony on the role ticks played in the spread of animal diseases. Nevertheless, the realisation

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[53] Quarterly Meeting of the Western Board of Horticulture, *AJCGH*, vol. 16 (26 April 1900), p 565.

that these arthropods might be responsible for undermining the livestock economy had already been assumed. In 1877 a government commission noted that ticks were commonly found in the Eastern Cape, and the 33 per cent decline in sheep numbers over the past ten years was partly attributed to the presence of these vectors.[54] Some farmers suspected that the disease of sheep and goats designated as heartwater was caused by these insects. However elucidating research did not become an immediate priority of the Agriculture Department in the immediate aftermath of this commission. Initial scepticism on the part of Duncan Hutcheon, a lack of staff and funding, together with the absence of scientific precedents on which to base local investigations, resulted in the effective shelving of this field of research until the closing years of the nineteenth century.[55]

In 1898 Lounsbury approached Hutcheon and offered to carry out research into ticks. His aim was to study the life cycles of these insects as a preliminary step towards devising methods of control and eradication. Lounsbury expressed his interest in economic terms: 'The vital importance of ticks in their known and suspected relations to stock-farming justifies exacting investigations', he wrote.[56] Along the coastal strip of the Eastern Cape, swathes of country formally capable of sustaining healthy merino flocks were overrun with these insects and much of the land was now 'useless for small stock'. In Albany, one of the worst affected districts, the sheep population had fallen from 309,000 in 1865 to 148,000 in 1899. Heartwater had also reduced goat numbers from 31,500 to 5,300 over the same period.[57] Lounsbury was also alarmed because the heartwater belt was spreading further west into the Midlands and without action, the

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[54] CPP, G3-1877: Report of the Commission on Diseases in Cattle and Sheep in the Colony, pp xi-xii.
[55] For details about Hutcheon's approach to insects and disease see, for example, W. Beinart 'Vets, Viruses and Environmentalism'.
[56] CPP, G36-1900, pp 19-20.

country's most favourable angora region could be decimated by the disease.[58] He was convinced however that the acquisition of scientific knowledge, as the basis of ecological control, would ensure that the veld could be reclaimed for agriculture and prosperity would be restored.[59] Given the vital importance of merino wool and mohair as sources of colonial revenue, it seemed imperative that such studies be carried out. Lounsbury voiced public concerns that some farmers in coastal areas had adapted to entomological conditions by shifting from wool to meat production. Although the reason was not understood, it was discovered that Persian sheep, bred for mutton, had a greater resistance to heartwater than merinos.[60] However rational this diversification away from wool production might have been, it posed a direct threat to the Colony's future balance of payments.

Lounsbury was able to commence his work on ticks in 1898 because of changes that had arisen both within the Cape and in the international scientific arena over the past twenty years. On the home front there was an increase in pressure from farmers who wanted explanations as to why their livestock industry was suffering. Lounsbury himself attributed the authorisation for his research to a resolution passed at the Farmers Congress in Kimberley where it was specifically requested that an investigation be carried out into the suspicion that the bont tick was the cause of heartwater.[61] A new urgency for research into enzootic and epizootic diseases emerged in the wake of the rinderpest epidemic of 1896-1897. Although insects did not propagate this disease, the 90 per cent fatality rate amongst cattle in the days prior to inoculation emphasised the devastating

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[57] 'Editorial Notes', *AJCGH*, vol. 21 (October 1902), p 292.
[58] CPP, G36-1900, pp 19-34 gives details of his justification for this research and preliminary analysis of his findings.
[59] CPP, G18-1901, p3.
[60] C .P. Lounsbury and W. Robertson 'Persian Sheep And Heartwater', *AJCGH*, vol. 25 (August 1904), pp 175 – 179.
[61] CPP, G36-1900, pp 19-34.

effect an epizootic could have on the livestock industry, and pushed the issue of disease control to the fore. Moreover, this outbreak did have the benefit of ensuring that the recruitment of additional veterinary surgeons became financially justifiable, thus providing a larger number of experts who could assist in the exploration of animal diseases. Internationally, developments in the understanding of germ theory and the evolution of tropical medicine as a specialist science promoted research into the role of vectors as the transmissive factor in propagating infection.[62] Of particular relevance to the Cape was the work of the American scientists, Theobald Smith and Frederick Kilborne, who in 1893 published their discovery that the cattle disease Texas fever, similar to South African redwater, was carried by ticks.[63] Once the connection between entomology and veterinary science had been established in the United States, the scientific credibility needed to justify the pursuance of such research in the Cape had been provided.

Continued interest in this line of investigation throughout the first decade of the twentieth century was sustained by the arrival in the neighbouring colonies of the cattle disease known as East Coast fever. With a 95 per cent mortality rate Hutcheon described this as 'one of the most dangerous diseases that had ever invaded South Africa'.[64] The epizootic broke out in Southern Rhodesia in 1902 and soon spread into the Transvaal and Natal. Ticks were immediately suspected of harbouring the infection and Cape farmers and politicians looked to scientists to safeguard the Colony from invasion. Charles Tod from East Griqualand highlighted the importance of cattle in the rural economy, estimating that £5,000,000 was invested in

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[62] W. Bynum and R. Potter (eds). *Companion Encyclopaedia to the History of Medicine* (London and New York, 1993), chapters 6, 8, 10, 16, 24.
[63] P. Cranefield, *Science and Empire*, chapter 2.
[64] Annual Congress Of The Agricultural Union, *AGCGH*, vol. 27, July 1905, p 55.

bovine assets in the Transkei alone.[65] Although East Coast fever did not enter the colony prior to Union, the quest for knowledge in the hope of forestalling its potential impact remained a major priority for government funded research.

Lounsbury's investigations involved three lines of exploration: identification of the specific ticks which transmitted diseases and the subsequent study of their life cycles, the development of effective dipping solutions to destroy the insects and finally veld experiments aimed at starving ticks out of an infected area. The results of Lounsbury's work were well publicised in his annual reports and in the *Agricultural Journal*. However, he did not work alone. In Cape Town Lounsbury was assisted by the veterinary department in particular liaising with James Spreull and the bacteriologist William Robertson.[66] Studies of East Coast fever brought him into close contact with the Swiss bacteriologist, Arnold Theiler, working in Pretoria. He also sought the corroboration and backing of metropolitan scientists corresponding, for example, with Professor G. Neumann, the French expert on ticks, who authenticated many of Lounsbury's findings.[67] American and Australian techniques were adapted in an attempt to eradicate these arthropods. Farmers collaborated in this work by collecting engorged insects for analysis. Of particular importance was the role played by Llewellyn Roberts, of Cottesbrook Farm near Fort Beaufort, who provided Lounsbury with land and stock on which to carry out prophylactic experiments.[68]

The identification of infectious ticks and their life cycles occupied much of Lounsbury's time over the next seven years. Within

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[65] CPP, A2-1908: Select Committee on East Coast Fever, evidence Of Charles Tod, pp 65-72.
[66] CPP, G36-1900, pp 19-34; G18-1901, pp 2-4; G29-1902, pp 3-9; G6-1904, pp 11-15; G6-1904 (2) pp 4-7.
[67] CPP, G36-1900, pp 19-34; G6-1904, pp 22-43.
[68] CPP, G36-1900, pp 19-34; G62-1905, pp 3-4.

two years of commencing this research he positively confirmed that the *Amblyomma hebraem,* or bont tick, carried heartwater.[69] In 1902 *Haemaphysalis leachi* was discovered to be the transmitter of malignant jaundice (or biliary fever) in dogs, one of the most serious diseases affecting the Cape's canine population.[70] These findings were important because they laid the foundation of Lounsbury's international reputation as an expert on tick analysis. They also helped to consolidate the role of an entomologist as an important individual within the state bureaucracy. Prior to 1903 Lounsbury had not even had a formal laboratory in which to carry out his research. In his own words:

> The first deliberate transmission of heartwater by ticks took place in my own back yard and that of East Coast Fever at the ... building site. The life cycle of the dog tick was followed through on a pup confined in the office, and this pup was the first victim of biliary fever contracted through ticks under observation. The life cycle of the fowl tick was traced on fowls imprisoned in the office.[71]

By 1903 public confidence in the importance of entomological research and the role of Lounsbury in pursuing this had been secured. Despite the emerging post war depression the government considered his work vital enough to justify the expense of setting up a laboratory at Rosebank near Cape Town in which to continue these investigations. It was here that much of the research into East Coast fever was carried out. By 1904 it was proven that both the male and female brown ticks, *Rhipicephalus appendiculatus*, were the principal transmitters of this disease in the nymph stage of their life cycle.[72] This discovery, concurrent with similar findings by Theiler in Pretoria,

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[69] CPP, G18-1901, pp 2-4.
[70] CPP, G70-1903: Report of the Government Entomologist, pp 18-20.
[71] C.P. Lounsbury, 'The Pioneer Period', p 16.
[72] CPP, G6-1904, pp 4-7.

was important in promoting South Africa as a serious and significant contributor to entomological science. Their work was also notable because their results contested the conclusions initially proclaimed by one of the world's most eminent virologists Robert Koch. Koch had suggested that the blue tick, *Rhipecephalus decoloratus,* which propagated redwater, also caused East Coast fever.[73] Experiments by Lounsbury and Theiler proved that this was not the case and confirmed that East Coast fever was in fact a discrete disease. Scientists working in South Africa were consequently breaking new ground, challenging the claims of established experts and promoting important discoveries emanating from the country's unique environment.

Having identified the heartwater vector Lounsbury began experiments on the eradication of *Amblyomma hebraem* from the small stock areas. This was a particularly important line of research because of the inability of the Veterinary Department to produce a suitable vaccine (chapter 2). Lounsbury looked to the experience of settlers in Queensland to try to devise an effective dipping agent. Here heartwater had also been a devastating scourge, but Australian practice had demonstrated that it could be suppressed through the monthly use of arsenic compounds. Lounsbury carried out his own experiments and concluded that farmers here should dip their animals every two weeks because of the prevalence of ticks on the veld and the speed at which they reproduced and metamorphosed. Lounsbury recommended a solution of one pound of arsenic to thirty gallons of water.[74] Arsenicals were subsequently suggested as a medium for fighting a variety of insects, including the propagators of East Coast fever.[75]

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[73] P. Cranefield, *Science and Empire*, chapter 5.
[74] 'Farm And Veld', *AJCGH*, vol. 26 (March 1905), p 320; 'Ticks And Stock Disease', *AJCGH*, vol. 36 (April 1910), p 476.
[75] CPP, A2-1908: First Report of the Select Committee on East Coat Fever, evidence of C.P. Lounsbury, pp 45-65.

To try to encourage the adoption of this form of prophylaxis, Jameson's Government introduced a 50 per cent subsidy payable to Divisional Councils and farmers associations that were prepared to construct public dipping tanks.[76] Under these terms 21 tanks were built in 1905 and 23 the following year.[77] In 1908 the Cattle Cleansing Act was passed in a legislative attempt to reduce the proliferation of varieties of ticks which either transmitted redwater or could host East Coast fever. This statute prohibited the movement of all cattle in designated areas in the Transkei, as well as in the settler districts of Albany, Alexandria and Knysna without certification of supervised dipping. It was also accompanied by a rapid increase in the number of tanks constructed in the Transkei and Pondoland in an effort to prevent the spread of East Coast fever into the Colony from Natal.[78] These measures had been introduced with the support of the Bunga as well as the influential pastoral lobbies within the Farmers' Congress and the Agricultural Union.[79] They mirrored attempts to deal with the acari mite and ensured that localised mandatory cleansing, together with the regulation of stock movements, constituted principal features of entomological control against a variety of animal diseases.

However, dipping was not without its problems. Since the life cycle of the principal vector of East Coast fever, *Rhipicephalus appendiculatis,* lasted only five to six days, cattle dipping would have to occur at least once a week to effectively kill the ticks. The difficulty with this was that too frequent immersions undermined the health of

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[76] CPP, G47-1906: Report of the Director of Agriculture, p 13.
[77] Ibid. and CPP, G32-1907: Report of the Director of Agriculture, p 16.
[78] CPP, G31-1909: Report of the Director of Agriculture, pp 6-8. 17 tanks had been built in the Transkei and three in Pondoland during 1908. 13 more were being constructed on the Pondoland/Natal border.
[79] TTGC, Annual Report for 1909, pp xlvi-xlvii. Annual meetings of Farmers' Congress, *AJCGH,* vol. 24 (April 1904), pp 495-6; vol. 30 (May 1907), p 649; vol. 32 (March 1908), p 483. Agricultural Union conference 1906, *AJCGH,* vol. 29 (July 1906), p 78.

the animals. Experiments had been carried out in America and Australia to try to find alternatives to arsenic, but these had met with little success.[80] Consequently the inability to rely totally on chemicals, because of the threat they posed to livestock, meant that different methods of combating vectors had to be considered.

As an alternative strategy Lounsbury looked to the environment to provide a more tenable solution. To tackle both heartwater and East Coast fever he suggested experimenting with the practice of 'starving out ticks' by clearing infested areas of favourable hosts. The precedent for this had been a successful campaign in Texas to diminish the incidence of redwater there. Once again anglophone networks had been an important source of his inspiration. It was in this method that Lounsbury placed his ultimate hope for disease control. Referring to heartwater he explained that:

> Everything that has been learned to date regarding the nature and spread of heartwater appears to me hopefully indicative that the disease is one which may be eliminated by the temporary exclusion of stock susceptible to it; and in the nature of things the tick may be almost, if not wholly exterminated by the exclusion of stock. I believe that two years would suffice to practically exclude the tick from a well-enclosed camp.[81]

He recommended that the government took over a heartwater infested farm and carry out intensive investigation, as it was only through direct work in the field that foreign theories could be tested. Lounsbury argued that the expense was justified because of the 'enormous losses due to ticks'. Accordingly the early twentieth century saw experiments carried out on Llewellyn Robert's farm in

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[80] CPP, A2-1908: Appendix C.
[81] CPP, G29-1902, p 3.

Fort Beaufort.[82] Numerous articles in the *Agricultural Journal* publicised Lounsbury's results. Lounsbury hoped that progressive pastoralists would carry out investigative trials on their own lands and communicate their findings to the Department of Agriculture. A collective form of experimentation involving both farmers and the state was thus evolving, mirroring the agronomic trials organised by Eric Nobbs (chapter 2) and challenging the unfavourable image of the Agriculture Department as being somewhat detached from the day to day world of real farming. Some successes were reported. Arthur Fuller, for instance, claimed that he had effectively eradicated ticks from his estate in Komgha by clearing out small stock for three years.[83] Nonetheless, although this approach appeared to be the most promising way of tackling any future invasion of East Coast fever, this infection was likely to be much more difficult to deal with than heartwater. Lounsbury was concerned that the presence of *Rhipicephalus appendiculatis* in the Karoo and the Western Cape, areas not normally regarded as part of the tick belt, would mean that large tracts of land would have to be abandoned for many years. If eradication were to be such a long-term commitment, it would evidently be more difficult to encourage farmers to set aside land, which would normally have constituted the basis of their income.[84] Whereas pesticides were regarded as a panacea for tackling insects that attacked fruit trees, dealing with ticks appeared to involve more than just the chemical destruction of an unwelcome predator. Lounsbury also advocated a more environmental approach, in which the constructive and careful management of the veld was needed to

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[82] CPP, G62-1905, p 3.
[83] Annual Congress Of The Agricultural Union, *AJCGH*, vol. 23 (September 1903), p 251.
[84] CPP, A2-1908: Evidence of C.P. Lounsbury and his letter to Crewe, Appendix C.

manipulate ecological systems in the economic interests of pastoral producers.[85]

Lounsbury's work on ticks was significant because it demonstrated the important contribution that the Cape could make to western science. In this field Lounsbury was able to play a more innovative role than had been the case with frugivorous insects because the Colony had a unique collection of vectors that had yet to be classified. Hence he could not automatically turn to America or Australia for specific information. Lounsbury's publications pertaining to his tick experiments brought him renown especially in his home country. Whilst in South Africa Lounsbury had retained his membership of the American Association of Economic Entomologists, founded in 1889. In the first issue of the Association's publication, the *Journal of Economic Entomology,* produced in February 1908, Lounsbury's work was the topic of two leading articles by W. A. Hooker of the American Bureau of Entomology.[86] According to Hooker, who lauded Lounsbury with the status of 'professor': 'Professor C.P. Lounsbury, Government Entomologist of Cape Colony, may well be considered the pioneer in the study of the biology of ticks'.[87] He continued that apart from the seminal work of Smith and Kilborne on the cattle tick, little of note had been discovered and published about the life cycle and habits of these creatures. Hooker gave extensive scientific details about the nature of the research into heartwater, malignant jaundice and East Coast fever. Thus the United States was becoming the recipient of knowledge from countries to which it had originally exported its scientific expertise. These literary acknowledgements demonstrated the strength of the links that were

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[85] Ibid.
[86] W.A. Hooker, 'A Review of the Present Knowledge of the Role of Ticks in the Transmission of Disease' and 'Life History, Habits and Methods of Study of the Ixododea', both in *JEE,* vol. 1 (February 1908).
[87] W.A. Hooker, 'A Review', p 66.

emerging between scientists in the anglophone settler states. Entomology played an important role in the creation of international intellectual networks and the development of a recognised scientific culture and methodology endorsed by peer review and accountability.

Intellectual legitimacy and credibility were also sought and obtained from the metropole. During the visit of the British Association for the Advancement of Science to southern Africa in 1905 (chapter 2), Lounsbury presented two papers. His physiological lecture entitled 'Transmission of Certain Diseases by Ticks' was a detailed scientific narration of the discoveries he had made into tick borne diseases, in which he tried to elucidate the close connection between the insect world and the livestock economy within the Colony.[88] His zoological presentation on the 'Habits and Peculiarities of Some South African Ticks' was far more complex and acknowledged the metamorphic, alimentary, reproductive and habitational differences between a variety of *ixodinae* and *argasid* sub-families of ticks.[89] This lecture suggested that even though he called himself an 'economic' or an 'applied' entomologist, his work could also be interpreted as pure, investigative science. Lounsbury had evolved from a promoter of fruit sprays into an empirical scientist in his own right.

(3.4) Locust Extirpation – A Question of Political and Economic Priorities

The economic prominence of both pastoral and fruit production enabled Lounsbury to attract sufficient support and funding to carry out research aimed at enhancing these specific agricultural pursuits. However, Lounsbury was less successful in promoting measures,

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[88] *CT*, 18 August 1905.
[89] *CT*, 19 August 1905.

which he felt were essential if the Cape were to be physically protected from locust depredations and the Colony acquitted of its emerging reputation as the pariah of southern Africa, due to the absence of rigorous eradication procedures. The question of locusts sheds some light on the priorities of agricultural spokesmen in the early twentieth century as well as manifesting constraints on the political influence of the government expert.

There were two species of locust that periodically invaded the Cape. One was the Red Locust (*Cyrthocanthis septemfasciata* or *Acridium purpuriferum)*, which had made incursions into the Eastern Cape from Natal during the 1890s. This was the less devastating of the two, but harder to deal with since it did not operate in groups.[90] The second type, the Brown Locust (*Pachytylus sulcicollis)*, originated in the arid regions of German South West Africa and swarmed through the Northern Cape into the central Karoo. It visited the Colony sporadically from the close of the nineteenth century and remained the more prevalent of the two species during the early part of the twentieth. This insect lay dormant in the desert during the summer and then migrated south between the months of March and July for oviposition and subsequent metamorphosis. Migratory routes were neither annual in occurrence nor totally predictable in terms of direction. Why swarming happened at all was unclear. Although the Cape could be affected by both species, the Colony was less susceptible to invasion than the neighbouring states. Yet when the Brown Locusts did overrun the Colony as in 1903-04, 1906-07 and 1909-10, the effects could be devastating. In February 1905 the *Agricultural Journal* reported that 60 per cent of the crops in the

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[90] C. W. Howard, 'Locust Destruction in South Africa', *JEE*, vol. 3 (June 1910), pp 260-272. Howard was an American entomologist who first worked for the Transvaal Department of Agriculture but by 1910 was the Chief of Entomology in Portuguese East Africa. Also, C. P. Lounsbury 'The Locust Plague', *AJCGH*, vol. 31 (August 1907), pp 168-169.

Northern Cape and Orange River Colony had recently fallen prey to locusts.[91] Much of the veld in the Midlands had been devoured. The civil commissioner of Molteno described the situation there during the spring of 1904: 'veld destroyed everywhere, only hard sour grass left, and sheep and cattle getting poorer every day and suffering severely from drought'.[92]

In the aftermath of the South African War a number of exterminatory methods aimed at mitigating the effects of a locust invasion were suggested in official publications. Commentators recommended that locusts were easiest to eradicate when they were still in their eggs, which could be collected and destroyed, or when they were in the hopping or *voetganger* stage of development. The type of ad hoc measures that were advocated included burning the infested veld, trampling devouring swarms with stock, the digging of traps into which hoards of locusts could fall and be destroyed by paraffin and the application of asphyxiating soapy solutions which blocked their ventricles.[93] There was no single recommended method and eradication was not compulsory. Individual farmers, rather than central or local government, were responsible for dealing with locusts on their property in whatever manner they chose.

In the Transkei Resident Magistrates organised extirpation campaigns with the collaboration of chiefs and headmen.[94] Elsewhere, government assistance was limited to providing *Mucor,* an entomogenous fungus that had been produced at the bacteriological

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[91] 'Correspondence: A Working System of Locust Destruction', *AJCGH,* vol. 26 (February 1905), pp 269-271.
[92] 'Locusts in the Colony: Collated Report by the Agricultural Department', *AJCGH,* vol. 26 (February 1905), p 257.
[93] C. W. Mally, 'The Destruction of Locusts', *AJCGH,* vol. 26 (March 1905), pp 406-420.
[94] 'Locusts in the Colony', p 258.

institute in Grahamstown since 1897.[95] From late 1900 it was obtainable gratis from Resident Magistrates in order to encourage usage.[96] However, many farmers refused to endorse it due to its doubted efficacy, its inability to parasitize in dry weather and its laborious application.[97] Eventually, as in dealing with fruit pests, insecticides superseded biological controls. Initially pioneered in Natal, the use of arsenicals laced with a sugary substance became the recommended toxicant throughout southern Africa.[98] By 1910 Lounsbury had fabricated his own ready-made compound which was made available to people residing in infested areas.[99] This product had been designed with the collaboration of individual farmers who tried out their own concoctions on their estates and reported their findings.[100] The Smartt Syndicate, for instance, provided invaluable information on the required strength and quantity of poisons needed to deal with swarms in the particularly vulnerable Britstown District.[101] This reliance on 'co-operative experiments' highlighted the lack of entomological personnel as well as the absence of sufficient state funding to ensure that professional scientists executed trials on a systematic basis.

Overall the response of governments and farmers to locust invasions was one of crisis management. Unlike the other colonies the Cape had no staff of permanent locust officers to direct farmers and

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[95] 'Government Notice: Locust Disease Fungus' appeared in *AJCGH* frequently in 1900, for example, vol. 16 (1 January 1900), p 60. Identifying the species of fungus was a preoccupation at Kew as well as in South Africa and Australia, 'South African Locust Fungus', *AJCGH,* vol.19 (19 December 1901), pp 850-855.

[96] 'Locust Destruction', *AJCGH,* vol. 17 (25 October 1900), pp 535-537.

[97] 'Locust Destruction and the Use of Fungi', *AJCGH,* vol. 18 (17 January 1901), pp 103-104. According to C. W. Howard, 'Locust Destruction in South Africa' experiments carried out by the mycologist working in the Transvaal, I. Pole Evans, indicated that fungus was not a viable solution for South Africa.

[98] C. Fuller, 'Locust Destruction in Natal', *AJCGH,* vol. 16 (10 May 1900), pp 613-616.

[99] A. van Ryneveld, 'Locust Destruction 1909-1910; Invasion by Brown Locusts', *AJCGH,* vol. 36 (February 1910), p 159.

[100] CPP, G62-1905, p 11.

manage a regulated eradication programme. Nevertheless, in response to the swarms of 1903-04 more orderly procedures were put into place to try to co-ordinate the efforts of individual farmers. In November 1904 Jameson's ministry entrusted the organisation of locust eradication to the Entomology Department.[102] However, the government fell short of drawing up legislation empowering this department to enforce the obligatory destruction of swarms. Lounsbury's initial priority was to undertake 'locust mapping'. Farmers in each field cornetcy were invited to participate in discovering the breeding grounds and distribution of swarms by completing postcards detailing the time, location, extent and direction of a migration. Lounsbury hoped this information could be used to persuade the government of the need to plan precautionary measures to deal with future infestations, justifiable because these could be introduced for a specific locality, based on observatory evidence of prevalence.[103] However, the data collated did not include any monetary estimate of the ravages locusts wrought to the land. Thus Lounsbury lacked the statistical information that might have persuaded ministers that these alar predators posed a threat to the viability of the rural economy.

Nonetheless, extirpation did become more systematic. From 1905 districts could elect their own locust boards from amongst local farmers. Their role was to visit properties, distribute arsenic solutions and demonstrate the usage of government loaned spray pumps.[104] The number of state-owned pumps rose from 600 in 1905 to over 1,500 by 1910. During the 1909-10 migration 30 districts appointed locust officers. Alfred Van Ryneveld, the Chief Locust Officer, estimated that

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[101] A. Van Ryneveld 'Locust Destruction 1909-1910', p 164.
[102] C.W. Mally, 'The Destruction of Locusts', p 406.
[103] C.P. Lounsbury, 'The Locust Plague', *AJCGH*, vol. 31 (August 1907), p 171.
[104] 'Government Notice 1036 of 1905', *AJCGH*, vol. 29 (November 1906), p 598.

15,306 swarms had been destroyed in the course of that year. [105] Overall, Van Ryneveld was impressed with the efforts farmers had made to co-operate: 'I can conscientiously say that the locust campaign has been a great success'.[106] The fact that farmers seemed to be able to deal relatively effectively with these pests, when provided with leadership and materials, to some extent obviated the need to legislate.

As soon as the Entomological Department gained responsibility for locust destruction, Lounsbury argued that the only way to deal effectively with this pest was to make the application of arsenicals obligatory. Such regulations were already in place in Natal and the Orange River Colony. Failure to follow suit not only undermined agriculture in the Cape, it also hampered eradication programmes elsewhere. In 1908 Lounsbury insisted that:

> The question of the compulsory destruction of locusts should receive early and serious attention from the Government. The feeling amongst progressive farmers in many parts of the affected areas seems very strongly in favour of a compulsory measure inasmuch as the neglect of any one farmer to kill the swarm that hatches in his place generally causes more loss to others than to himself. The cost to the farmer need be trifling only, for one or two hours work will suffice for spraying that will be sure death to an average swarm.[107]

Effectively Lounsbury stipulated that similar measures to those that he had introduced to facilitate nursery inspection should be adapted for the destruction of locusts. Lounsbury had some support, predominantly from anglophone agriculturists in the Northern and Eastern Cape. A farmer writing from Griqualand West in 1905, for

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[105] A. Van Ryneveld, 'Locust Destruction 1909-10', p 161.
[106] Ibid.

instance, complained that this district had been plagued with locusts, which appeared 'to be on the increase not only in numbers but in voracity'.[108] He stated:

> with two years of drought and locusts galore, our lot has been anything but a happy one. From all accounts the whole Colony has the same tale to tell, and if locusts are to increase unchecked, I am afraid the agricultural prospects of the Country will be entirely ruined...One would think that this was quite as much a matter for compulsory legislation as scab. In my opinion, it is at present causing greater losses, as not only the sheep farmer is affected, but the whole agricultural industry.[109]

Arthur Forbes of Schoombie advocated spraying with arsenite of soda. A farmer who neglected the killing of locusts on his property, he explained 'cannot possibly rank amongst the so-called "progressives" and he fully deserves to be heavily fined'.[110] Just as commercial small stock farmers, such as Walter Rubidge, associated compulsory dipping with progressive legislation and effective entomological control, so too did those agriculturists who believed that enforced collective action was essential to mitigate the extent and devastation of swarming.

Lounsbury expressed disappointment not only at the lack of statutory regulation, but also at the fact that the initiative for entomological research and its application was now being appropriated by neighbouring colonies. The ability to deal effectively with locusts, in his view, constituted a means by which a country could project itself as an organised, modern state. The Cape was the least affected region of southern Africa but nevertheless he felt the Colony should strive to maintain its image as the progenitor of

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[107] CPP, G23-1908: Report of the Government Entomologist, pp 51-52. Lounsbury had also advocated compulsory extirpation in his report G6-1904, pp 7-9.
[108] 'Another Plea For Locust Destruction', *AJCGH,* vol. 26 (February 1905), p 271.
[109] Ibid.
[110] A. Forbes 'Locust Destruction', *AJCGH*, vol. 32 (February 1908), p 238.

agricultural progress in the region. He later lamented that the 'Cape Colony should have led in locust suppression, but its government was always chary of tackling the problem firmly, notwithstanding the recommendations of its insect experts'.[111] This sense of lost status was demonstrated when the Inter-Colonial Locust Bureau, set up for the collation of data and for the planning of uniform eradication programmes, was located in Pretoria.[112] Geographically, this city occupied a more central position for co-ordinating such work. However, it was also indicative of the gradual shift of political pre-eminence to the Transvaal. Contributors to this Bureau came from all four regions of the future Union as well as German South West Africa and Portuguese East Africa. Locust extirpation played an important role in bringing about co-operative action to deal with pests, which threatened the economy of the entire region. In the South African context this liaison provided an underlying scientific rationale for closer union.

Effective inter-colonial collaboration necessitated collective policing and financing. Lounsbury, however, attacked the Cape government as disinterested and suggested that the Colony was becoming the subject of ignominious censure by spokesmen from the former Afrikaner Republics; countries previously associated with retrogressive agricultural practices. At the 1906 Locust Conference in Pretoria, the entomologists of the Transvaal and Orange River Colony laid the blame for their region's infestations on their southern neighbour. Bechuanaland and Griqualand West were prominent hatching grounds for the *voetganger* and the Cape had failed to take any action to clear these areas.[113] Lounsbury complained that:

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[111] C. P. Lounsbury, 'The Pioneer Period', p 24.
[112] 'Locust Conference: Inter-Colonial Scheme for the Tabulation of Data', *AJCGH*, vol. 29 (November 1906), pp 635-636.
[113] Ibid.

If the money is not voted, the uncreditable anomaly of the Cape Colony standing by and doing practically nothing, while the smaller and younger Colonies, which for years it worried with appeals for co-operation, are doing their utmost, will continue to exist. The methods of destroying the pest developed in recent years in South Africa are far in advance of those known in the past, and if locust destruction was ever profitable in the country it certainly is now.[114]

Nevertheless, Lounsbury failed to attract adequate funding to contribute to this joint venture. In that year the Transvaal spent over £14,000 and the Orange River Colony £12,000 on eradication. In the Cape, meanwhile, Lounsbury's request for £7,500 was reduced to £500 in the parliamentary estimates.[115] He complained that this risible sum was hampering agricultural survival in the Northern Cape at a time when locust numbers were increasing. Lounsbury's experiments at Rosebank involved testing the environmental conditions under which these insects propagated. He learnt that laid eggs could survive droughts, by lying dormant in the ground for several years as they only hatched when the temperature and moisture levels were such that food supplies could be guaranteed. Thus the Cape could be subjected to infestations whenever grasses recovered from a prolonged period of siccity. Unless rigorous action was taken to kill the *voetgangers* then the post drought recovery of crops and veld in the northern and eastern regions, Lounsbury insisted, would be seriously impeded.[116]

Yet neither the Progressive nor the successive South African Party governments were prepared to act, either in terms of voting substantial revenues or by introducing measures for compulsory

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[114] C. P Lounsbury, 'The Locust Plague', *AJCGH*, vol. 31 (August 1907), p174.
[115] A11-1907: Inter-Colonial Conference To Deal With The Locust Pest, Pretoria, May 1907, p 13; C.P. Lounsbury 'The Locust Plague' pp 168-174.
[116] C. P. Lounsbury 'The Locust Plague'.

eradication. The reasons for this largely rested on political priorities, which in turn reflected the views of the dominant and articulate members of the rural electorate. In hindsight Lounsbury attributed this stance to two factors. The state, he wrote, always:

> hesitated to incur the hostility of the backveld to compulsory measures to combat a plague believed to appear as a divine punishment for mortal sin; and no doubt much of its apathy was due to the seat of government and the populous south-western districts being practically immune from locust invasion. Moreover, in the period following the 1899-1902 war, the Cape government was not as free to pursue a vigorous policy regarding locusts as were the northern colonies. Whereas the Cape had representative government, the northern colonies were crown dependencies.[117]

Lounsbury's prejudicial insinuation that it was the uneducated Afrikaner who stood in the way of progress resonated with his interpretation of their attitude to nursery legislation. Comments by Van Ryneveld, however, contested this overarching viewpoint. In 1910 the Chief Locust Officer reported that many of the farmers who participated in the eradication campaign included those 'who on former occasions through religious and other scruples refused to fall into line, have now been converted and did excellent work'.[118] Lounsbury's second point about the limited geographical dissemination of the swarms was more relevant. In his study on the development of institutionalised entomology, John Clark has shown that dealing with insects which threatened both public health and agricultural productivity was part of the agenda of 'constructive imperialism' as promoted by Joseph Chamberlain (introduction). Entomology emerged during this period as the 'tool of Empire' in both

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[117] C.P. Lounsbury, 'The Pioneer Period', p 24.
[118] A. Van Ryneveld, 'Locust Destruction 1909-10', p 161.

India and Africa.[119] Alfred Milner and his successor in South Africa, Lord Selborne, were influenced by agendas from Whitehall and were initially in a position to introduce measures in the former republics with minimal consultation. However, the fact that the governments of both the Transvaal and Orange River Colony continued to vigorously pursue locust extirpation after attaining responsible government, suggested that the recurrent incidence of swarming in the crop growing areas of the Highveld was the determining factor in encouraging legislation there. In the Western Cape, the horticultural districts as well as the cereal producing areas centred on Malmesbury, were, at that time, being spared these uninvited visitors. Eradication had proved expensive in the northern colonies and electors in the Western Cape were unlikely to push for costly legislation that would bring them no ostensible financial return.

Moreover, the contemporary evidence indicated that there were other reasons why legislation of this nature was not enacted. Locusts did not appear to have been a priority of politicians representing the Eastern Cape either. Whereas wild carnivora and noxious weeds were the subjects of frequently convened select committees (chapters 4 and 6), locusts were not. Nor were the consequences of their destructiveness debated in parliament. When the question of compulsory eradication was briefly raised in the Legislative Council in 1907, the then Agriculture Minister, Charles Crewe, commented: 'The farmer was not sufficiently acquainted with the pest for legislation of the sort suggested to be brought into force'.[120] Crewe's predecessor, the agriculturist, Arthur Fuller, was not committed to such a statute either, despite being an Eastern Cape farmer. Fuller believed that it was up to landowners themselves to deal with these insects through

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[119] J. Clark, 'Science, Secularization and Social Change', chapter 6.
[120] *CH*, 13 August 1907, p 186.

local initiatives, such as the existent locust boards.[121] Locust destruction, therefore, did not take a central role in the agenda of the Progressive Party. It was also not an issue upon which the typically more eloquent progressive spokesmen such as Walter Rubidge, William Southey or Charles G. Lee made a stand. Hence it failed to obtain the extensive publicity which surrounded some of the other questions pertaining to agricultural development and regulation. Neither did locusts feature strongly at farmers' conferences, the resolutions from which normally formed the basis of rural petitions presented to government.

The intermittent and localised nature of locust infestations, when compared with the prevalence of other agricultural pests diminished their importance. Some pastoral producers feared using pesticides lest they poison the veld and stock and remained unconvinced by official messages to the contrary.[122] The cost of extirpation was also a consideration facing both farmers and the state. The economic depression restricted parliamentary appropriations. Farmers Associations meanwhile were divided on the issue. In Molteno, the scene of severe veld devastation in 1904, the local society advocated inter-colonial co-operation and in 1907 voted that farmers themselves should defray two-thirds of the cost incurred in tackling locusts. Their Bedford counterparts, however, resolved that the state should settle any bill. B. Bowker suggested that if extirpation was to be successful 'locust inspectors would have to be appointed like the scab inspectors under the Scab Act, and see what a mighty expense that would be.... The plague was a plague on the whole community and Government should deal with it by legislation and public funds'.[123] As with many aspects of rural development, be it fencing,

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[121] CPP, A11-1907, p 4.
[122] CPP, G23-1908, p 57.
[123] 'Bedford Farmers Association: Locust Destruction', *MNKF*, 15 July 1907.

irrigation, stock dipping, weed or vermin destruction, the decision as to who should pay was always a divisive and emotive one. Locusts, unlike jackals and noxious weeds, did not appear to be at the forefront of agriculturists' demands for species annihilation.

Lounsbury reaction to this situation was to allege that farmers in the affected areas deprecated the lack of statutory measures:

> many an up-country farmer fervently hopes that this fortunate section of the Colony may soon suffer again, not from any illwill [sic] towards the vine and fruit farmers, but in order that the Government in Cape Town may be brought to realise the gravity of the locust problem in the land.[124]

Such a response implied underlying tensions over the regional allocation of resources. At the same time, the apparent lack of urgency of the Members of the Legislative Assembly who represented the Eastern Cape constituencies suggests that Lounsbury may have exaggerated the extent of this regional resentment. In order to pressurise the state to introduce measures that he, as an entomological advisor, felt were essential to protect both crops and veld, Lounsbury needed to claim a support base. However, his inability to present a persuasive and influential case revealed limitations to the powers of government advisors. Without the vocal support of prominent politicians, in this case the majority of progressive farmers, the scientist's ability to manage rural policy, primarily on account of his own specialised knowledge, was severely restricted. Ultimately, the pre-Union governments would supply spray pumps, prepare arsenic and instructions for use, but no more. The locust was treated as a sporadic nuisance that was unlikely to seriously undermine the overall commercial viability of the rural

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[124] C.P. Lounsbury, 'The Locust Plague', p 168.

economy in the long term. Hence it was an issue upon which politicians would stake neither their own political careers, nor the exiguous state finances.

(3.5) Conclusion

Entomological research played an important role in the early twentieth century in dealing with noxious insects which challenged the development of both the agrarian and pastoral sectors of the economy. The initial request for an entomologist came from wine and fruit producers in the Western Cape who wanted an alternative to the pyrogenic eradication of infected plants when dealing with insect or parasites. They sought a scientific expert who could research and understand the life cycle of insects in order to devise preventatives and remedies to protect their agricultural assets rather than to destroy them.

To this end, Lounsbury introduced a range of biological and chemical solutions, which had first been tested in the fruit growing regions of the United States and transferred these methods to the Cape. His attitude to the regulation of the fruit industry showed he was a fervent statist. The restrictions imposing on importing plants, together with the Nurseries Inspection and Quarantine Act were symptomatic of growing official involvement in the economic enterprises of individuals. These laws were introduced because Lounsbury had been able to persuade powerful lobbyists, such as the Boards of Horticulture, that stringent legislation was necessary to protect the country from the probosces of injurious arthropods. Such legislation emphasised the important role farmers' organisation played in the direction of state policy. This factor was further highlighted by Lounsbury's inability to successfully press for the obligatory extirpation of locusts, precisely because many progressive farmers did

not see their destruction as an essential component for the regeneration of the post bellum economy. Dealing with frugivorous insects on the other hand was vital if the country were to become a major exporter of fruit.

In the interests of the pastoral economy of the Eastern Cape, meanwhile, it was research into the life cycle of various ticks and the conception of methods to control their prevalence that took priority. Work in this vein lead to the introduction of dipping regulations in some tick infested districts and encouraged new ecological approaches to veld management. Lounsbury's discoveries reflected the vitality of colonial science and brought him considerable renown. It also helped to secure his place as head of the Entomology Department in the administration of the Union of South Africa.

CHAPTER IV

Progressivism, Telluric Degradation and Hydraulic Reclamation in the Early Twentieth Century Cape

> The great problem of the country – or rather, the greater part of it – is water. In the Western Province the rainfall is generally deemed sufficient and is fairly seasonable. But in other parts, where the rains are intermittent and are largely the result of torrential or semi-torrential downpours due to thunderstorms, the problem of the water supply is an ever-present trouble which calls for the greatest thought, the greatest energy and, frequently a large outlay of capital. It is, therefore, apparent at a glance that the great need of a large proportion of agricultural South Africa is the study of the best means of conserving water in order to guard against the devastating effects of ever-recurring droughts. In conserving water for irrigation purposes and the utilisation of floods lies the great source of wealth for this country.[1]

Charles George Lee, like many Cape farmers, was concerned about the paucity and unpredictability of the Colony's annual rainfall. This disquiet was felt by both stockbreeders from the Eastern and Northern Cape who feared the consequences of drought on their livestock numbers, as well as by arable farmers from the more fertile littoral regions who relied on adequate and consistent precipitation to water their crops. In the Karoo and the Transkei debates about the conservation of water often went hand in hand with an attack on the traditional agricultural practices engaged in by both settler and African farmers.

This chapter explores the rhetoric of degradation and considers the action taken by arable and pastoral producers to try to reclaim desiccated landscapes and transform them into fecund fields and grassy paddocks. Since the passing of Merriman's Irrigation Act in 1877, the Cape government had tried to encourage farmers to accept official loans and invest in hydraulic schemes in order to improve agricultural yields.

The Progressive Government continued this policy. The Commissioner of Public Works, Thomas Smartt, had demonstrated his confidence in the benefits that irrigation could bring to an arid zone, through the activities of the Smartt Syndicate in the Britstown District of the Northern Cape. Smartt was optimistic about the Colony's economic future, informing parliament that 'notwithstanding what some people had said, this country would yet become a larger exporter of produce through the building up of irrigation works'.[2] Following on from Merriman's statutory legacy, Smartt was instrumental in introducing new administrative and legislative procedures that were intended to facilitate a more collective approach to hydraulic development. This chapter considers the role played by individual farmers, official scientists and the Progressive Government in encouraging irrigation, and reflects on the extent to which these initiatives were successful. The approaches advocated by hydraulic engineers, as with the policies of veterinarians (chapters 1 and 2), were not always readily accepted by the agricultural community, manifesting not only tensions between professional scientists and local farmers, but also demonstrating how the nature of science itself was a contested issue.

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[1] C.G. Lee's Presidential Address to the Agricultural Union, *AJCGH*, vol. 33 (July 1908), p 80.
[2] *CH*, 15 June 1906, p 156.

As with developments in veterinary science, entomology (chapter 3) and silviculture (chapter 5), the Cape was influenced by events outside its borders. In the United States, conservation was very much associated with the protection of valuable water supplies. Its rationale was to optimise the use of the country's telluric resources through the development of scientifically planned irrigation systems, capable of transforming sterile desert or semi-desert environments into economically productive domains. During the presidency of Theodore Roosevelt closer settlement schemes were planned for the west in order to reduce population pressures in the east and open up new lands for agricultural production. The 1902 Reclamation Act enabled people to purchase 160 acres plots in the western states; the money raised was designated for the construction of irrigation works.[3] Hydraulic advances made in the United States affected the Cape Colony in terms of both expertise and scientific agendas. In the 1890s American engineers such as W. Hall and Francis Johnson visited the Colony and published reports suggesting ways forward in irrigation practice.[4] The Reclamation Act became a point of reference in discussions on the possibility for hydraulic developments and closer settlement schemes in the Cape itself.[5]

Webster Gordon, the Colony's first Director of Irrigation (1904-1906) suggested to Merriman that if the Reclamation Act succeeded,

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[3] D. Worster, *Rivers of Empire: Water Aridity and the Growth of the American West*, (Oxford University Press, 1992), chapter 4. Worster provides the most detailed account of what he describes as the development of a 'hydraulic society' in the American West. Although, in practice, a homesteader community did not emerge and agriculture was primarily developed by wealthy commercial farmers, the issue of closer settlement remained a powerful ideological concept.

[4] CPP, G45-1898: W. Hall, Report on Irrigation Legislation and Enterprise in America Australia and Europe; CPP, G76-1899: F. Johnson, General Review of Irrigation and Water Supply, Rainfall and Water Rights in Cape Colony.

[5] For example, F. Kanthack, 'Irrigation Development in the Cape Colony: Past Present and Future', *AJCGH*, vol. 34 (June 1909), pp 645-657.

India 'will have to move down a place in the irrigation class'.[6] The historian Daniel Headrick has described India as the 'birthplace of modern irrigation engineering'.[7] Huge water systems along the Ganges and Indus Rivers had been developed since the 1850s to try to overcome the spectre of famine and promote the cultivation of cash crops, such as cotton, for the British market. India was important in the Cape context as it formed the training ground for three of the Colony's most influential analysts in the post war period, namely: William Willcocks, Webster Gordon and Francis Kanthack. Their assessments of the country's hydraulic situation, together with their proposals for land reclamation, were born out of their Indian experiences. Hydrology, like silviculture (chapter 5), owed much to the precedents enacted in the Asian sub-continent and demonstrated an imperial system of scientific and technical exchange that influenced rural strategies in South Africa. Hydraulic imperialism was both an economically motivated attempt to transform landscapes and a projection of human control over the environment.

The rhetoric and activities in the Cape pertaining to irrigation can, therefore, be situated within the wider international context of American and British imperial ideology. Although commentators in the Cape, unlike their anglophone contemporaries, did not refer to 'national efficiency' in those terms, the language of progressivism often revealed a similar underlying discourse. Farmers, scientists and government officials spoke of the land as a commodity, which had to be utilised to the best advantage. A critique emerged, especially at an official level, of the individualistic attitude of many farmers, whose sole concern was to exploit the earth in their own selfish interests with little regard for the requirements of their neighbours let alone the

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[6] Merriman Papers, MSC 15, Box 24, no. 226: W. Gordon to J. X. Merriman, 27 August 1904.

nation. Just as co-operation was promoted by Jameson's ministry as a prerequisite for the improvement of agricultural production and marketing (chapter 2), so too did the maxim of collective action become a familiar refrain of those politicians and scientists who wished to see the enactment of effective land management strategies. An ideology based on the assumption that technology could overcome the Cape's hydrographic deficiencies was a key feature of the narrative and espoused an optimistic assumption that arid zones such as the Karoo could be converted into a South African Eden. The closure of the Cape's frontier restricted opportunities to trek for new land once the old had been exhausted and thus inspired a revised perspective of rural realities. In the Western Cape, the realisation that something needed to be done to restore the fortunes of local viticulturists (chapter 1) encouraged farmers here to consider new technological and organisational initiatives. Conserving water and improving the existing land became the duty of the current generation in order to bequeath a more productive environment to the next.

(4.1) The Rhetoric and Response to Agricultural Degradation in the Cape

Wilhelm Westhofen, the Chief engineer in the Public Works Department, was convinced that the Colony had to develop irrigation if it were 'to be made a self-supporting one so far as the production of foodstuffs is concerned'.[8] However, the Colony was not an easy country to irrigate. Throughout the early twentieth century the highest proportion of artificially watered areas consisted of the ostrich/lucerne

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[7] D. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism 1850-1940* (Oxford, 1988), p 172.

[8] CA, Pamphlet JP1191: W. Westohofen 'The Irrigation Question in South Africa 1860-1902', p 373. No date was given, but references to Arthur Douglass as Commissioner of Public Works dates the paper to 1902 or 1903.

producing district of Oudtshoorn in the Little Karoo and the viticultural and horticultural divisions of Worcester and Robertson.[9] Much of the Colony's rainfall fell on the coastal escarpments whilst the river valleys of the hinterland, such as the Gourtiz, Gamtoos, Great Fish and Sundays could receive less than ten inches of precipitation in a given year. In parts of the Karoo and the north west, farmers had tried to tap subterranean sources through experimental boring. However, the amount of water produced was usually only capable of sustaining stock and could not guarantee the quantities needed to irrigate crops. Water, when it fell on the interior, often descended in torrents, potentially causing severe erosion and the loss of valuable topsoils, especially in areas where the earth had been trampled by trekking livestock or exhausted by agrarian practices that did not follow the contour of the land. Consequently, debates about rainfall and the condition of the veld became very closely intertwined in the Cape. However, the viability of hydraulic engineering could be precluded not only by erratic rainfall, but also by regional topography, deficient soils, high labour costs, and the extensive amount of capital needed to purchase imported building materials and skills for schemes, which ultimately might not furnish a sufficiently remunerative yield to justify the heavy outlay.

The nature and utility of the Cape's precipitation attracted publicity from the mid-nineteenth century onwards. Writing in 1875 the Scottish botanist, John Croumbie Brown, (the Cape's official botanist 1862-1866), tried to provide an explanation for the Colony's unpredictable precipitation and its consequences in his book *The Hydrology of South Africa.*[10] He attributed what he perceived to be

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[9] CPP, G41-1906: Report of the Director of Irrigation, p 16. Gordon estimated the following acreage was under irrigation in 1905: Oudtshoorn 23,264 acres; Worcester 14,459 acres; Robertson 9,068 acres. The 1911 census of Union of South Africa reported the same ranking.

[10] J. C. Brown, *Hydrology of South Africa* (London, 1875).

growing aridity to both primary and secondary causes. The former provided a geological explanation about causation: 'to water being carried off by superficial and subterranean water courses may be attributed primarily and principally the desiccation of South Africa', he suggested.[11] However, he also attached blame to human agency. Both European settlers and indigenous populations had customarily burnt the veld to try to ameliorate the quality of the grassland in *sourveld* areas and had also felled trees to clear land for farming or timber extraction.[12] More recently the introduction of merinos had accelerated the denudation of the land. This was partly a result of the system of kraaling, adopted to protect small stock from the predatory jackal, and the subsequent creation of eroded tracks that were eventually transformed into sluits through recurrent torrential rains. It was also a consequence of overstocking and a feature of ovine feeding, characterised by close cropping and deracination of grasses, thus leaving the land exposed to the harsh elements. Denudation adversely affected the hydroscopicity of the soil by removing the protective humus layer, which would normally retain precipitant moisture. Degradation was not just about the apparent drying up the land or a visible increase in erosion; it also concerned the question of the quality of the veld and its consequent ability to support substantial flocks and herds.

The arguments expounded in *The Hydrology of South Africa* altered little over the following decades. Similar theories of hydroscopicity were put forward by Kanthack in the early twentieth

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[11] Ibid., p 157.

[12] *Sourveld* was found mainly along the coast. Here the soils were considered poor and later analysed as acidic, containing too much decomposed humus. The natural vegetation tended to be coarse rushes and sedge, disliked by stock. Burning the veld enabled new grasses to grow, which were supposed to be more digestible. However, the continual burning of the humus ultimately destroyed the nitrogenous nutrients in the soil and made it barren.

century (chapter 5) and concerns about desiccation, erosion and the prevalence of noxious weeds featured frequently in editions of the *Agricultural Journal* as well as in the national and local newspapers. What was subtly different was the alteration in emphasis. Whereas Brown attributed the major reasons for siccity to geological formation, commentators in the twentieth century tended to lay greater primacy on the destructive influence of humans. Brown had been critical of the practices of settler farmers in general. However, the new rhetoric sought to differentiate between those rural practitioners who were aware of degradation and consciously acted to try to arrest its process and those who came to be castigated as 'unenlightened' and 'unprogressive' because they appeared to indulge in antiquated and injurious forms of agriculture. Attention to the environmental effects of commercial farming became an apperception of progressive identity. Progressives argued that long-term sustainability was dependent on conservation in terms of protecting the veld and water supplies. Graphic expressions were adopted warning people of the 'evils' or 'ravages' of sluiting, erosion and desiccation. It was both a language of catastrophe and crisis, and concurrently, there lay a message of hope: the land could be revived through changes in farming practice and attention to scientific methods. Reclamation in the Cape context had a somewhat different meaning to that expressed in the United States. In America reclamation was associated with transforming desert lands that had never been utilised for formal agriculture into homesteader plots. Whereas in the Cape, at least in respect of the Karoo, this ideology involved the regeneration of the pastoral environment, which was perceived to be losing its stock sustaining capacity, and had to be reconstructed to serve the present and future needs of commercial farmers.

After the South African War these arguments became more pronounced. Drought reared its head in 1902-1903 (chapter 1) and in

1907. The severity of these occurrences enhanced the debate that perhaps the climate was drying up. Although there was no hyetographical evidence to prove that precipitation was altering, the drought of 1903 was recorded as the worst such incidence since 1862, and raised questions about desiccation. Allen Davison, the Chief Inspector of Sheep, highlighted the reliance of Cape farmers on pastures in the Orange River Colony; a country depleted of stock as a consequence of war. Davison estimated that over 1,300,000 sheep and goats trekked to the neighbouring colony in 1903. Many of these animals came from the arid north west, the districts of Prieska and Carnarvon, being particularly badly hit by drought.[13] This event indicated not only the vulnerability of Cape pastures but also demonstrated a dependence on other countries to keep the pastoral economy afloat in times of crisis. Once stock numbers in the Orange River Colony recovered, potential access to alternative grazing land would be reduced. Dependence also represented the antithesis of the ideology of the post bellum Cape in which it was argued that the Colony should be self-sufficient in foodstuffs evidently implying, at a primary level, that animals received adequate nutrition. To those who believed in optimising the use of the land, the idea of trekking was regarded as a retrogressive and decadent farming practice. The consolidation of sedentary, non-transhumant husbandry necessitated the improvement of the veld, the conservation of water and the cultivation of fodder crops to overcome seasonal shortages. This rationale formed a significant dimension of the progressive critique after the South African War.

In the first decade of the twentieth century, William Southey emerged as one of the most eloquent and well-publicised commentators on irrigation and land reclamation. Based on his

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[13] CPP, G28-1904: Report of the Chief Inspector of Sheep, pp 1-4.

experiences at his farm of Varkenskop in the District of Middelburg, he told his audience of farmers at Cradock about his irrigation projects, using floodwaters from the Great Brak River to restore the veld.[14] On the one hand his lecture was an indictment of settler farming practices, yet, at the same time, it spoke of ecological salvation. He described how his farm, purchased in 1871, once consisted of rich vlei capable of supporting much stock, yet over time the sheep had formed erosive tracks which eventually became sluits, ever widening with each fall of heavy rain. Eventually the vlei disappeared and the land was reduced to a dry, desolate, donga. This was the state of the veld not only on his property, but also on many farms throughout the Midlands and the Eastern Cape. Such degradation was a consequence of 'neglect, and nothing but neglect'.[15] If sluiting were to continue for another 100 years 'South Africa instead of being a country worth living in, will become a howling wilderness'.[16] Yet all was not lost: through awareness of the problem, together with knowledge of the local environment, farmers could prescribe scientific and technological remedies to repair the land. At Varkenskop, he blocked up the sluits and trapped the seasonal floodwater from the Brak, which he channelled onto the land by a series of weirs and sluices. The freshet was used to inundate the ground, revitalising it both in the deposition of silts and in the replenishment of the water table, thereby reconstructing the former vleis. Not only were the natural grasslands restored, but water was also used to secure fodder by providing irrigation for 120 acres of lucerne. Conserving floodwaters that would otherwise have flowed out to sea represented utilisation as opposed to waste, and the maximisation of available aquatic resources.

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[14] W. Southey, 'Flooding the Veld: A Remedy for the ravages of Sluits', *AJCGH*, vol. 25 (August 1904), pp 187-191.
[15] Ibid., p 187
[16] Ibid., p 188

Southey conceptualised his hydraulic system without the assistance of professional engineers, based on his personal observation of the topography and hydrology of his farm. Although his use of freshets was not unique in the eastern Karoo, Varkenskop became a paragon of irrigation development, largely because of the self-advertisement of its owner who consciously promoted himself as the epitome of the progressive farmer.[17] Southey stood as an example to others as to what could be done to improve the pastoral economy. His rationale was utilitarian and materialistic. 'Flooding the veld' he stated, 'means more grass, more stock, more money and prosperity to the Country, bringing with it pleasure and comfort to those living in it'.[18] He invited both politicians such as Merriman and irrigation experts like Gordon to his property to admire and learn from his work.[19] Settler science and technology was as much a feature of irrigation development as the engineering projects of government experts and, to some extent, it posed as a challenge to the role and position of professional engineers (below).

Whilst William Southey articulated the need to reverse the effects of sluiting, Walter Rubidge voiced disapprobation about the tradition of kraaling and the dangers of overstocking. Rubidge was one of the key proponents of government subsidies payable to farmers who wished to invest in jackal proof fencing in order to render kraaling obsolete (chapter 6). In his testimony before the Select Committee on the Cost of Living, Rubidge attributed the low returns obtained by farmers for their meat to the dominance of the retail market by the

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[17] For other documented examples of such irrigation techniques see W. Beinart, 'The Farmer as Conservationist: Sidney Rubidge at Wellwood, c1913-1951', presented at the Manchester conference on 'the local' 1997 and chapter 5 of his forthcoming book *Rise of Conservation.*

[18] Ibid., p 188.

[19] Ibid. Southey reported that Gordon showed interest in his works and was currently surveying and sketching plans of his weir system. W. Southey to J. X. Merriman, 5 May and 5 August 1905, Merriman Papers, MSC 15 Box 25, nos. 123 and 150.

storage companies (chapter 1). Many farmers could no longer compete, he claimed, due to the misuse of the land, 'our capital'. Rubidge explained how the important small stock rearing area near Graaff Reinet, known as the Ruggens, had become badly overstocked. Once three sheep could subsist on an acre of land; now the veld could only support one such beast. What was needed was an end to kraaling and its replacement by a comprehensive system of paddocking and rotational grazing, giving the veld a chance to recover. Fifteen years of proper veld management, Rubidge believed, would increase the stock holding capacity of the land and end the Colony's dependence on imported meat.[20]

Promoting the sustainability of grasslands was also seen as contingent upon improving the nature of domestic livestock. To his fellow farmers of the Zwart Ruggens Association, Rubidge explained:

> Whenever farmers found that their stock were getting smaller in bone and deteriorating generally, they should reduce the number; they would then find that there would be a noticeable improvement, both in these particulars and as regards the flavour of the flesh.[21]

Connected with this was the rationale underpinning the launch of Charles G. Lee's *Stud Book* in 1907 (chapter 2). Improved breeding techniques was not just about increasing yields per beast and hence profitability. The acquisition of pedigree stock, it was hoped, would obviate the need for farmers to accumulate so many animals, many of which were economically of poor value, yet continued to devour

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[20] CPP, C1-1905: Select Committee on the Cost of Living, testimony of W. Rubidge, pp 162-182. Rubidge was brought up in this district on Wellwood Farm, purchased by his father Charles Rubidge in 1838, following the exodus of the Afrikaner proprietor on the Great Trek.

[21] Annual meeting of Zwart Ruggens Farmers Association, *AJCGH*, vol. 22 (February 1903), p 696.

copious amounts of precious and scarce veld. Quality rather than quantity became an adage of pastoral progressivism.

Sustainability was also a preoccupation in the Transkei. It was in this area that stock numbers were particularly heavy. The problem of overcrowding of both people and animals in the locations featured in the reports of the Bunga as well as in the Blue Books. Cattle provided an important economic and social function in traditional society and many Africans were keen to accumulate bovines despite their impact on the land. Increasingly squeezed off their former communal landholdings by white settlers, African communities were determined not to lose their movable assets as well as the static. This situation was a cause of concern for both black and white commentators. Amongst the African population there was a debate over the deleterious effect domestic animals had on the environment. At the annual meeting of the Bunga in January 1906, for example, Councillor Veldtman from Butterworth argued that stock constituted the main causal agent in the formation of sluits. 'Men who were once rich are now poor through the destruction of their properties from this cause', he declared.[22] Veldtman was contested by Councillor Njikelana from Qumbu who was dubious about this role attributed to beasts and could not concede that dongas were a consequence of eroded cattle paths.

The official reports of the inspectors of locations, describing incidences of sluiting, selecting Keiskamma Hoek, north of King Williams Town, and Herschel, near the Lesotho border, as areas of particularly severe degradation. [23] L. Tainton, reporting on the former reserve, ignored the historical geo-politics of the Eastern Cape, and claimed that the severe erosion over the last 30 years was solely the

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[22] Report of TTGC 1906, p 5.

fault of the black population. He alleged that they had learnt nothing from the efforts of missionaries, who had laboured to instruct them in the art of conservation. Now vast areas of mountain slopes had become uninhabitable. Fountains forests and fauna had all been destroyed. Environmental degradation was thus deposited in the realms of a colonial racial discourse in which Africans were regarded as incapable of safeguarding their pastoral position;[24] an attitude that echoed the views expounded by the forest conservators with regard to silvatic and faunistic resources (chapters 5 and 6). Nevertheless, any official effort on the part of the colonial state to try to tackle the issue of erosion in the Transkei remained outside the government's ambit during the first decade of the twentieth century. Degradation in the reserves did not affect settler farmers directly, nor did it impede labour recruitment for the mines as the Mpondo, for instance, were able to increase their cattle holdings during these years due to the financial opportunities this industry offered.[25] As far as politicians were concerned, erosion was not severe enough, in either ideological or economic terms, to promote the introduction of ecological measures, such as those engendered in the demonstrator schemes of the 1920s or the Betterment measures of the 1930s and 1940s.

The government was, however, receptive to demands from white farmers for an investigation into the question of erosion. In 1904 the annual meeting of the Farmers Congress resolved that Gordon, the recently appointed Director of Irrigation, should organise a scientific enquiry into the causes of sluits and how they could be prevented.[26]

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[23] CPP, G46-1906: Blue Books on Native Affairs p 17, covers Keiskamma Hoek and G36-1907, pp 12-13 and G24-1907, pp 4-5, deal with Herschel.
[24] CPP, G46-1906: Report of L. Tainton, Inspector of Locations at Keiskamma Hoek, p 17.
[25] W. Beinart, *Political Economy of Pondoland.*
[26] CA, AGR 1551, F15836: Gordon's memo included in Notice 1205 1904 in the Government Gazette indicated that it was the farmers (rather than the government) who took the initiative in seeking this survey.

The colonial survey was concluded and submitted as a report by Kanthack in 1908.[27] Kanthack articulated a concept of altered rather than degraded landscapes. It was impossible, he argued to reverse 50 or 100 years of agricultural practice. The priority should be to block up the existing sluits and take action to prevent further gully formation, by increasing afforestation (chapter 5) and discouraging the practice of veld burning.

Progressive farmers were not only perturbed about erosion, but also believed that the quality of the grasses was declining due to invasion by weeds. Lauded varieties of Karoo bushes such as Spekboom (*Portulacaria afra.)* found in the Little Karoo and the more ubiquitous varieties of *Pentzia* were being ousted from their ecological niches by rapacious colonisers such as Bathurst burrweed (*Xanthium spinosum),* Mexican poppy (*Argemone mexicana),* prickly pear (*Opuntia ficus indica)* and jointed cactus *(Opuntia aurantica).* For stock farmers weeds constituted plants which were either inedible to stock or those which reduced the value of pastoral products such as burrweed whose spines were a major contaminant of wool. Alternatively, noxious plants were those which successfully competed with cultivated crops in the struggle for moisture and pedological nutrients. One such pest was dodder (*Cascuta spp),* a parasite that could strangle the growth of a lucerne field. Such herbage therefore undermined the productive capacity of both veld and field and posed as a direct threat to the profits of commercial farmers.

Problematically, adjudicating between a precious species and a noxious weed was a topic of controversy amongst progressive farmers themselves. Prickly pear, for instance, was the subject of several select committees in which state-organised eradication programmes

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[27] CPP, G62-1907: F. Kanthack, 'Sluits, their evil and prevention'.

were recommended.[28] Yet, some farmers such as the Rubidges at Wellwood, held the non-thorny cultivated variety, known as *kaalblad*, to be an important stock food in times of drought.[29] By law only one weed, *Xanthium spinosom*, was subject to the theoretical process of compulsory extirpation throughout the country because the presence of burrs adversely affected the value of wool.[30] Otherwise it was up to divisional councils to decide which plants would be subject to eradication in a particular district. In this respect, farmers lobbies played an important role in putting pressure on local authorities to deal with deleterious plants. The minutes of the divisional council meetings illustrated the economic priorities of each region as well as indicating the ecological environment in which different species flourished. In Oudtshoorn, for instance, where the ostrich feather industry was so important to the local economy, it was dodder that farmers wanted dealt with both in terms of eradication and seed control.[31] In Bedford the Farmers' Association demanded proper enforcement of the anti-burrweed measures as well as the extirpation of dodder, Mexican poppy and jointed cactus highlighting the priority given to sheep rearing in this region together with local diversification into lucerne production as an alternative to veld depasturing.[32]

Eradication policies were dependent upon co-operation between farmers and divisional councils as weeds and spores were easily dispersed and had no respect for non-ecological boundaries. This contingency invoked a considerable amount of invective from

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[28] Four select committees were convened between 1890 and 1910, including one in 1906.

[29] Richard Rubidge planted *kaalblad* for fodder in 1894 and his son, Sidney Rubidge, extended the plantation 15 years later. W. Beinart, 'The Farmer as Conservationist', pp 10-12.

[30] Compulsory eradication of burrweed was enacted in the 1889 Divisional Council Act.

[31] CA, 4/OHN/1/1/1/6, minutes for 12 February 1904, 12 April 1907, 10 May 1907, 14 June 1907, 13 December 1907.

progressive farmers against both districts and neighbours who either refused to, or were ineffective at, implementing strategies of herbaceous control. Failure to eradicate was associated with a selfish disregard for others: 'the neglect of one careless farmers involves loss and endless trouble to the entire district', wrote one subscriber to the *Agricultural Journal*.[33] Much of the vituperation resonated with indictments against pastoral farmers who were regarded as lax in dealing with sheep scab (chapter 1) or with jackals (chapter 6), as well as criticisms of horticulturists who failed to tackle orchard and nursery pests (chapter 3). Such language was indicative of the concerns of commercial farmers who wished to protect their own property regardless of the economic realities facing those who were the subject of this verbal attack. As the Agricultural Assistant, Eric Nobbs, explained to the 1906 Select Committee on Prickly Pear, the introduction of laws making destruction of this prevalent weed compulsory would be unjust. Many farmers would be financially ruined by the high cost of herbicides and labour and would receive no real enhancement in land values as a result of their efforts.[34]

Progressive spokesmen, however, used vivid apocryphal language to try to obtain government support for the obligatory removal of plants, which they, as individuals, felt constituted a threat to their livelihoods. The ostrich farmer, Oscar Evans, for example launched his own crusade against jointed cactus, a weed particularly injurious, in his view, as it had no redeeming utilitarian features and was disseminated easily by wind, rivers or trekking stock. He saw the plant as 'the most serious enemy of its kind confronting the country today'. This 'hydra-headed octopus was spreading its thorny tentacles

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[32] CA, 4/BED/1/1/1/1, minutes for 17 February 1905, 16 February 1906, 5 June 1907.
[33] Anon, 'Weeds and their Suppression', *AJCGH*, vol. 16 (24 May 1900), p 727.
[34] CPP, A8-1906: Select Committee on Prickly Pear, second testimony of Eric Nobbs, pp 24-29.

about them until by and by it would squeeze the life out of the agricultural community, if they were not instant in action to kill it'. Evans demanded legislation making extirpation compulsory, the levying of local taxes specifically to deal with the cactus and high fines for those who failed to co-operate.[35] He was therefore invoking an increase in state powers in order to enforce compliance. This was a common feature of the rhetoric of progressive farmers who sought to define the role government should play in the operation of the farm. It can be compared with similar demands for more stringent Scab Acts (chapter 1), fumigation laws to deal with fruit pests (chapter 3), debates on compulsory extirpation of locusts and ticks (chapter 3), and attempts to make official loans for enclosing property contingent on the construction of jackal proof fences (chapter 6).

However, as Lance Van Sittert has illustrated, the weakness of the Cape state in terms of its actual administrative authority and availability of personnel, meant that when it came to enforcing any laws dealing with noxious biota, their enactment remained far from efficacious.[36] These limitations pertaining to the powers of the colonial government were also manifested in the difficulties conservators faced in promulgating some of the forestry regulations (chapter 5) and the effectiveness with which both conservators and the police could protect game on crown lands (chapter 6). In respect of weeds, burrweed remained the only plant subject to compulsory eradication after 1902. Jameson's government, with its tenuous majority, was as reluctant to face a confrontation with farmers over injurious flora as it was over the acari mite (chapter 1). Nevertheless, in 1907 the Progressive Ministry did try to encourage more vigorous action by empowering divisional councils to clean the land of a recalcitrant

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[35] O. Evans, 'Jointed Cactus: How to Combat it', *MNKF*, 30 July 1907.
[36] L. Van Sittert, 'The Seed Blows About in Every Breeze'.

farmer at the latter's expense.[37] However, this legislation was enabling rather than actual, and the permissive nature of the law practically nullified its effect. Two years after its enactment the Under-Secretary for Agriculture, Pieter J. Du Toit, expressed disappointment that although 51 divisions had paid lip service to these regulations, in practice, they were not rigorously applied. Weeds continued to flourish in their ecological niches and even burrweed was rampant in most areas. Councillors argued that enforcement was futile due to the ease with which seeds were dissipated.[38] Ideologically, therefore, progressive farmers had failed to convince many agriculturists of the value of their arguments, which they contended were in the best interests of commercial farming.

(4.2) Hydraulic Engineering: The Farmers Versus The Experts

A characteristic of the hydraulic debate was the presence of a rift between the theories and experiences of hydraulic experts on the one hand and the methods and concerns of colonial farmers on the other. Professional engineers who had trained in America or India were quick to criticise the level of irrigation in the Colony and to propose changes based on their observations elsewhere. However, these were not always welcomed or regarded as applicable for the Cape. William Willcocks, who had worked on irrigation projects both in India and Egypt, believed that in comparison with these countries, progress in South Africa had been almost stationary despite the wealth generated by mineral discoveries. The solution to this problem, he suggested, lay in the nationalisation of all waters and government construction of large-scale irrigation projects. 'All Rivers and Torrents to be proclaimed as public domain if Irrigation is ever to succeed in

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[37] Act 17 of 1907: Divisional Council Amendment Act.
[38] CPP, G31-1909: Report of the Director of Agriculture, pp 18-19.

South Africa', he stated.[39] The arguments pertaining to state intervention in water conservation mirrored the views of the conservators of forests, many of whom had also had served in India (chapter 5). Willcocks believed that irrigation had to be carried out by the government because developments by concessionaries and companies tended to be 'conspicuous failures', as such organisations were impatient to realise profits, and thus overtaxed the capacity of reservoirs and canals. However, nationalisation was not applicable to the Cape. The Colony was not the Punjab where the British government had taken control of rivers, planned irrigation projects and socially engineered the creation of peasant communities.[40] Instead perennial streams were regarded as the property of riparian owners whose rights were fiercely defended in the Supreme Court and in the colonial parliament. The state could not appropriate waterways without paying substantial compensation to riparian proprietors – an impractical proposition during a period of economic depression even if a nationalisation ideology had actually existed.

Willcocks was not alone in deprecating the state of hydraulic engineering. The 1904 census suggested that there were 196,400 morgen under irrigation in the Cape. The majority of these developments involved the utilisation of water from perennial streams such as the Breede and the Olifants Rivers in the Western Cape. Since the previous census of 1891 there had been a dramatic increase in

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[39] W. Willocks' report on irrigation was printed in instalments in the *AJCGH*. Nationalisation was discussed in vol. 20, (30 January 1902), p 161-163. Willcocks had been invited to the country by Milner in order to report on the possibilities of developing agriculture through irrigation and thus furthering Milner's policy of encouraging anglophone closer settlement schemes. The quotation appears on page 161.

[40] For example along the Chenab Canal System in present day Pakistan. For Indian hydraulic projects see for instance: E. Whitcombe, 'Irrigation and Railways' in D. Kumar (ed). *The Cambridge Economic History of India* (Cambridge, 1982) vol. ii and D. Gilmartin 'Models of the Hydraulic Environment: Colonial Irrigation, State Power and Community in the Indus Basin', in D. Arnold and R. Guha (eds). *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia* (Oxford, 1995).

irrigation using intermittent streams, or floodwaters, as well as a boom in the installation of artesian wells and windmills.[41] Nevertheless, the American engineer, C. Braine advised the Cape Society of Civil Engineers in 1904 that 'Irrigation in this part of the world is in an embryonic state'.[42] Willcocks had observed that the south west was the only area in which irrigation had been developed on any scale, and even here, the methods were described as primitive.[43] Gordon was more generous attributing hydraulic tardiness to topography rather than the attitude of farmers,[44] but Kanthack re-launched a technocratic assault on colonial producers. 'I have never met with, or heard of any white race who have less ambition to improve their material conditions for the benefit of themselves or future generations than the average backveld pastoral farmer of South Africa', he claimed.[45]

Kanthack associated irrigation somewhat narrowly with 'a handful of progressive ostrich farmers making great fortunes for themselves' in the District of Oudtshoorn, but, this he added, 'does not constitute development'.[46] He was astonished that in areas where there was the potential for irrigation works, such as along the Seacow River in the Northern Cape, people were apathetic.[47] He was also critical of decadence in agriculture and attributed the profligate use of water in arable farming to the absence of rigorous scientific investigation: 'In South Africa farmers have hitherto paid very little

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[41] CPP, G19-05: Census of 1904, p clxxxxv. The statistics claimed that 107,212 morgen were irrigated by perennial streams. The number of morgen inundated with floodwaters had risen from 32,608 morgen in 1891 to 64,976 in 1904. The country was alleged to have 2,168 boreholes and 2,5468 windmills in 1904, up 1,551 and 1,960 respectively on the 1891 enumeration.

[42] C. Braine, 'Possibilities of Irrigation in South Africa', *AJCGH*, vol. 24 (January 1904), p 54.

[43] W. Willocks' report on irrigation, *AJCGH*. vol. 20 (30 January 1902), p 168.

[44] Merriman Papers, MSC 15, Box 24, no. 226: W. Gordon to J. X. Merriman, 27 August 1904.

[45] F. Kanthack, 'Irrigation Development in the Cape Colony', p 647.

[46] Ibid., p 648.

attention to economy in the use of water for irrigating crops... The farmer should in every case determine what amount of water is required by his various crops, as grown on different soils on his farm'.[48] The term 'waste' provided a metaphor with which scientists castigated farmers, including those who regarded themselves as progressive, for their inability to manage the environment and their homesteads in an efficient manner. Kanthack also noted that landowners who constructed their own works adopted bizarre and inefficient plans 'weirs and other structures which almost defy the laws of gravity' had been created because farmers did not 'recognise their limitations in the designs of irrigation works'.[49] Kanthack promoted the importance of the engineer as the only person qualified to design viable irrigation schemes. The main problem he told his audience in Potchestroom was that 'Irrigation in the past has, in Cape Colony, been the reverse of scientific'.[50]

Scathing attacks from scientific practitioners helped create tensions between official hydraulic engineers and colonial farmers. C. Braine complained that agriculturists did not respect the experts. He considered the Cape unique because farmers claimed to know more about engineering than the professionals. Braine saw this as a reflection of the position of science in Cape society: an object of ridicule. Yet, science to Braine represented 'the basis of all prosperity, progress and civilisation'.[51] At the Bond congress in Stellenbosch in 1904, a resolution was passed stating that 'Government officials hampered the work by not following the advice of experienced farmers,

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[47] CPP, G34-1908: Report of the Director of Irrigation.
[48] CPP, G61-1907: 'Economical Use of Water in Irrigation and the Management of Stream and Irrigation Development', p 3.
[49] F. Kanthack's lecture to students at Elsenburg, *CTW*, 8 December 1909.
[50] F. Kanthack, 'Irrigation Development in South Africa with State Aid', presented to the second South African Irrigation Congress, *AJCGH*, vol. 36 (May 1910), p 531.
[51] C. Braine, 'Possibilities of Irrigation in South Africa', p 54.

who were acquainted with the circumstances of the district'.[52] State engineers and inspectors often lacked credibility because they were associated with some disastrous failures. Dirk Van Zyl, the Member of the Legislative Assembly for Clanwilliam, for instance, stated that farmers had no confidence in official engineers because local contractors had been far more successful at building dams and locating underground water in Calvinia than outside experts. The state commissioned Rooiberg Dam, near Kenhardt, which collapsed in 1900 just two months after completion, had been such a catastrophe, Van Zyl believed, precisely because the government engineer had acted against the advice of a local irrigation contractor.[53] Settlers had been developing irrigation systems long before the arrival of foreign advisors or state bureaucrats and a spirit of independence had evolved when it came to improving the value of the land. This is not to say that farmers did not want the help of government advisors; rather they sought scientific assistance on their own terms and did not wish to be dictated to or supervised by outsiders whose detailed knowledge of regional conditions might be insufficient to construct viable hydraulic schemes.

The failure of some engineers to locate water was largely a consequence of the absence of a hydrological survey of the Colony. This had not been carried out despite repeated requests from government advisors since the late nineteenth century that such an investigation was urgent.[54] In the post bellum Cape, Bernard Ritso, the Chief Inspector of Boring, was a vociferous advocate of hydrologic and hyetographic mapping, supporting a similar methodology to that which John Gilchrist had already adopted to assess the piscine

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[52] 'Bond Congress', *CTW*, 9 March 1904.
[53] *CH*, 28 June 1903. The Rooiberg dam was also the subject of a critical report produced by a select committee in 1903 (CPP, A19-1903).
[54] A survey was recommended by the engineers John Gamble in his report for 1879 (G12-1880), W. Hall in 1898 (G45-1898) and Francis Johnson in 1899 (G76-1899).

potential of the surrounding seas (chapter 2). Ritso urged the Cape government to follow the American example, since a hydrological survey there had 'given the most valuable assistance' to farmers and 'has assisted in no small degree in the triumphant progress and great prosperity of the country'. [55] Ritso looked to international scientific models as the basis for agricultural amelioration rather than to the intuition and experience of settler farmers. He saw the future of the rural economy lying in the construction of thousands of boreholes, which were cheaper to build than catchment dams and being less reliant on the vagaries of rainfall, were more likely to prove successful in the long term. Enthused by the discovery of vast artesian wells in Australia, Ritso optimistically believed that similar aquatic repositories existed in the Cape, but this could only be proved through the application of a scientific methodology. Knowledge of underground water supplies would not only facilitate discovery, but should also prevent wasting money on projects that were geologically bound to fail. In 1903, the government had investigated the prospects of deep well boring in the Vryburg District. Ritso complained that had the fact been known that the area was made up of igneous rock 'quite impervious to water', the attempt would never have been made.[56] Hydrological mapping was thus associated with notions of 'national efficiency' and the effective exploitation of resources.

Ritso was more positive however about the potential of the central regions. He described three-quarters of the Colony, as geologically 'Karroo Basin'. He believed that for millions of years water had seeped through the porous upper layers of rock to be trapped by impervious igneous dolomite dykes many hundreds of feet beneath the earth's surface. The Karoo could be saved for stock and

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[55] CPP, C1-1903: Select Committee into the System of deep Well Boring and the Development of Diamond Drills, evidence of B. Ritso, p 27.

agriculture by the discovery of huge subterranean seas. Experiments showed that some of the most prolific boreholes were to be found in this area.[57] Ritso expressed a romanticised belief that nature had provided for human survival, but only science as developed by humans gave people direct access to tellurian riches:

> Where this country covered, as in parts of the United States by a forest of windmills pumping water on to the land, the quantity raised would be a mere bagatelle in comparison with these vast reserves, and even if by sinking deeper a great artesian seas, such as that in Australia were tapped, and hundreds of million of gallons daily overflowed the surface, little need be feared for Nature has in the past made such an abundant provision for the storage of water in the crust of the earth that now the supply at the command of man appears to be practically inexhaustible... no spectre of a withered and barren country need haunt the progress of the boring work of the Colony, nor should the fear of depleted reserved retard the exploration of deeper water levels, which if successful, may so change the arid and sunburnt Karroo as to transform into the garden of South Africa.[58]

The sanguine expectation that the Karoo could be transformed into an Edenic garden was a popular myth in the early twentieth century Cape, reflecting an over-optimistic assessment of the subterranean landscape and the conviction that advancements in geological and engineering sciences would enable the retrieval of ancient water supplies. It was also a metaphor used by John Gilchrist who believed that a knowledge of the seas could lead to the fruitful exploitation of untapped shoals (chapter 2).

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[56] CPP, G69-1904, Annexure I: Report of the Chief Inspector of Water Boring, p 102.

[57] Ibid., pp 100-103. Ritso referred to the water supplies at Tarka Bridge Farm, near Cradock, where one million gallons were pumped daily to irrigate 300-400 acres of land.

[58] CPP, G24-1907: Report of the Chief Engineer of Water Boring, Annexure C, p 61.

However, Ritso's approach to locating the presence of water, based on accurate hydrological surveys carried out according to western precepts of scientific knowledge, was challenged by some colonists. This debate attracted so much attention that the contribution of local knowledge to national development formed the basis of a popular feature in editions of the *Agricultural Journal* for 1907, in which the question was posed 'The Divining Rod – Is it a Fraud?' Ritso, unsurprisingly, was convinced that it was, and displayed a disparaging attitude towards people who did not see physical science as the linchpin of progress. He claimed that when sites were selected by 'dowsers' 'the greatest number of them are unsuccessful'.[59] Water diviners and their supporters disagreed. An alternative scientific theory was promoted, for example, by Francis Biggs from Graaff Reinet. He claimed that for over six years he had been selecting underground water spots using the rod and had never had a failure. Biggs presented his own scientific narrative to try to explain the phenomenon of dowsing and was convinced that his ability to locate water was due to his sensitivity to electro-magnetism. Underground water, he assumed, was electrically charged and the human being provided the final link in the circuit returning the electricity to the ground. Twinges in the rod resulted from electrical impulses. Those who were unable to successfully use the rod were 'not good mediums for the electrical fluid'.[60] Biggs also wrote to Smartt, challenging the government to endorse a 'comprehensive test' to prove the powers of the rod. He proposed visiting ten farms in the Midlands where boreholes had already been planned. He would locate twenty sources of water and if more than two proved a failure he

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[59] CPP, C1-1903: Evidence of B. Ritso, p 25.
[60] Correspondence of F. Biggs, *AJCGH,* vol. 31 (August 1907), pp 206-207.

was prepared to announce: 'let the divining rod be proclaimed a fraud'.[61]

The government however refused to be drawn into this duel of knowledge and located itself firmly on the side of modern, metropolitan science. Nevertheless, these articles showed that adherents of populist or folk science were prepared to submit their theories to some kind of 'scientific' test in order to attain official credibility. Supporters of the 'rod' defended their position with a mixture of religious rhetoric and their own observations. A writer from Vryburg, for instance, quoted *Exodus* suggesting that God had told Moses if he wanted to find water he should 'use a rod, not a crowbar or a pick'.[62] Other farmers saw experts merely as intellectuals who had gained their instruction from books and academies. This constituted inferior knowledge, either because it was assumed, or because it had been demonstrated, that their theories did not coincide with the individual experiences of 'practical' colonial farmers. Given that the *Agricultural Journal* was the mouthpiece of progressive farming, the publication of such articles indicated that there were some commercial farmers who were prepared to endorse folk, rather than internationally recognised, science as an appropriate means of explaining the world and optimising resource utilisation. It also illustrated the non-homogenous nature of colonial science, which afforded space to both official and populist approaches to research and debate.

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[61] Ibid., vol. 31 (December 1907), pp 723-724.
[62] Ibid., vol. 31 (November 1907), p 596.

(4.3) The Role of the State in Irrigation Development in the 1900s

Unlike developments in silviculture, which were carried out largely under the aegis of the government conservators (chapter 5), irrigation was primarily the concern of private enterprise. In the post bellum Cape, the Progressive Government concentrated far more on facilitating, rather than instigating, the expansion of hydraulic works. In fact, the state played a much less direct role in the organisation of irrigation projects than had recently been the case due to its withdrawal from the creation of closer settlement schemes. To encourage more farmers to conserve water, Jameson's ministry, nevertheless, made two important contributions: they established the nucleus of a hydraulic department and introduced new legislation to make it easier for agriculturists to collectively plan the construction of irrigation works and procure official loans to do so.

During the first decade of the twentieth century the administrative structures in the Cape, as in the Transvaal, were altered as part of the reconstruction agenda of improving organisational competence. Just as the Agriculture Department had been reorganised and become more centralised in the name of national planning and uniformity of procedures, so too did the Department of Public Works. The creation of the positions of a Director of Agriculture (chapter 2) and a Chief Conservator of Forests (chapter 5) were mirrored in the emergence of an organisational hierarchy for hydraulic engineering.

Prior to 1904 there had been no permanently appointed engineers attached to the bureaucracy. John Gamble, the Colony's first official hydraulic engineer, for example, had been employed on a temporary contract, which had lasted from 1875 until 1886. This was

similar to the arrangement made with the first Superintendent of Forests, the Comte de Vasselôt de Regné, who worked in the Cape between 1881 and 1891 (chapter 5). This lack of continuity was characteristic of the nineteenth century, when many experts were recruited on short-term contracts according to the political or economic priorities at a particular point in time. By the early twentieth century, however, the commitment of the Progressive Government to enhancing both timber production and hydraulic development, was reflected in their readiness to reorganise these departmental structures.

In 1904 Webster Gordon became the first Director of Irrigation and the continuance of this position was secured with the appointment of Francis Kanthack as his successor in 1907. Gordon and Kanthack divided the country into three hydraulic regions, designated as the eastern, western and northern districts. A staff of circle engineers, who carried out irrigation surveys and offered advice based on a more familiar grasp of local geological and hydrographic conditions, served each circuit.[63] By enabling engineers to attain a more detailed knowledge of the local topography, the Public Works Department was trying to overcome its image of incompetence and prevent a repeat of incidents such as the Rooiberg Dam fiasco, which had done much to damage the reputation of official hydraulicians. The creation of a system of locally based circle engineers was also aimed at ending this sense of administrative detachment, which according to Lounsbury, had been one of the main criticism that farmers had levied against the Department of Agriculture (chapter 3). The Progressive Government was therefore trying to overcome these flaws and improve the status and credibility of the work of its scientific experts. Establishing a network of engineers also fitted into the Government's

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[63] CPP, G37-1907: Report of the Director of Irrigation, p 11.

agenda of providing expertise to stimulate the private development of irrigation projects.

At a more local administrative level, the 1906 Irrigation Act was an important statute intended to encourage farmers to take co-operative action in constructing irrigation works utilising both rivers and floodwaters. This collective approach resonated with the Progressive Ministry's attempts to foster the establishment of collaborative ventures for the production and marketing of agricultural produce (chapter 2). The 1906 enactment, was similar to the 1909 Game Laws (chapter 6) in that it was a consolidating act, designed to bring together the disparate and often complicated statutes which had been introduced in a piecemeal way since the introduction of Merriman's original legislation in 1877.[64] A principal aim of the 1906 Act was to reform the organisational structures pertaining to the inception of hydraulic projects and make it easier for farmers to overcome legal obstacles to development. Under the terms of the law, if two-thirds of riparian landowners in a particular district chose to, they could form irrigation boards in order to plan the construction of specific hydraulic schemes. They were also entitled to appoint river boards to deal with the distribution and management of fluvial supplies. Itinerant water courts were established to deal with disputes and minimise the number of costly processes dealt with in the Supreme Court. The act was essentially permissive, leaving it up to local farmers and divisional councils to decide whether they wished to create this administrative infrastructure in their area.[65]

This law came in the wake of a political withdrawal from official investment in the foundation of national hydraulic works, which had

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[64]CPP, G39-1909: First Inter-Colonial Irrigation Conference at Robertson. J. Sauer (Commissioner of Public Works in Merriman's ministry) provided an overview of the laws and select committees that had reviewed them between 1877 and 1909.
[65] Act 32 1906.

been a characteristic of state policy in the last quarter of the nineteenth in an attempt to invoke public confidence in the viability of irrigation schemes. Hydraulic engineers, such as John Gamble, with his experience of large dam projects in India, endorsed these developments. In 1880 he suggested: 'I maintain that large irrigation works would benefit the whole country'.[66] Under Gamble's supervision, the first state dam at Brand Vlei, in Calvinia District, was completed in the early 1880s. This was followed by irrigation settlements at Van Wyks Vlei and Douglas. The rationale for these ventures was part economic and part social. Economically it was hoped that the north west could become a suitable area for wheat cultivation, since this cereal required less water than many crops, and its production could help to reduce the overall import bill for wheat and flour. Socially closer settlement was associated with the problem of poor whiteism (chapters 1 and 2). The sub-division of some farms and the commercial rationalisation of others had contributed to the creation of an increasingly landless or immiserated Afrikaner class. Ideologically, rural impoverishment undermined the position of white settlers. In this racially charged period, underpinned by notions of Social Darwinism, penury was linked to concepts of ethnic degeneration. Settlement schemes were aimed at 'reclaiming' dispossessed whites and re-affirming their stake on the land.[67]

However, during the post war years, these colonies were the subject of several government enquiries and in general the reports were damning. In 1906 Merriman laconically opined that these settlements 'can scarcely be said to have come up to the expectations

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[66] CPP, G12-1880, p 3.

[67] 'Deputation to Smartt: Land Settlement', *CTW*, 15 November 1905. The deputation consisting of J. Hofmeyr and F. Malan argued that Afrikaners needed to be settled on the land to curb the drift to towns and prevent emigration to countries such as Argentina.

of the founders'.[68] Van Wyks Vlei, home to about 300 poor whites, was the subject of particular indictment. Before the Select Committee on Irrigation Settlements, Gordon remarked that 'the inhabitants certainly did not strike me as being at all prosperous'.[69] Although the construction of the dam was praised, the drainage system was inadequate and soils had rapidly turned brackish rendering them unsuitable for most crops.[70] The land had also become exhausted due to a lack of rotation, monocultural cropping and the absence of fertilisers. Only four 'wettings' were allowed each year, which according to inhabitants, was the main reason why they could only grow wheat. Many of the more enterprising farmers had left the settlement. From the evidence portrayed, it was clear that the settlers had very little understanding of modern farming practice. Ignorance about soil composition and the need for crop rotation was manifest. The chairman, Merriman, pointed out that the Americans had successfully experimented with planting crops, such as root vegetables, on brack soils. However, as one resident, Hugo Boonzaaier, explained there was not enough water to experiment. Many could not afford the £2 10s charge per 'wetting', nor could they afford the grazing licences. Fertilisers retailed at £3 a morgen, so dear that they were rarely used. No one knew how much water was needed to grow crops; water just flowed idly through the furrow, much of it being wasted.

The settlement also failed to provide amenities for the people – there was a school, Boonzaaier explained, but no teacher.[71] The report recommended that the settlers should be able to buy new plots for £10, further away from the dam, in order to enable the original

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[68] CPP, A15-1906: Report of the Select Committee on Irrigation Settlements, chaired by Merriman, p iii.
[69] Ibid., p 4. Evidence of Gordon who was not a keen advocate of closer settlement.
[70] Brack soil contained too many salts and were described as alkaline. With fertilisers however some crops could survive on this type of soil.

allotments to recover. [72] Yet it was evident that much more investment in terms of education, agricultural experimentation and demonstration, together with better water management structures, were needed before there could be any marked improvement in the viability and prosperity of this venture. However, the government financially and ideologically could not, or would not, make such a commitment. Disillusionment not only with Van Wyks Vlei, but also with Douglas, discouraged the government from investing in further closer settlement schemes for poor whites. As a consequence, projects that had previously been considered such as the Thebus Dam near Steynsburg and the Buchuberg Dam on the Orange River were cancelled in 1905 and 1907 respectively.[73]

Kanthack endorsed a retreat from large dam and settlement projects. These were 'utterly unsuitable for the poor white class', he stated.[74] This was a reversal of the policy, which Gamble had recommended 30 years earlier. Increasingly, politicians of both parties looked to the church as the potential provider for poor white communities. Smartt recommended the creation of *kakamasfen* throughout the country.[75] The comparative success of Reverend Marchand's 'labour colony' at Kakamas, founded in 1894 under the auspices of the Dutch Reformed Church presented an alternative model of social engineering. Residents had to be members of the Dutch Reformed Church and were chosen on the basis of ecclesiastical references of good conduct. The planners of the settlement invoked a strong Protestant work ethic, encouraged education and wealth

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[71] CPP, A15-1906: Evidence of H. Boonzaiaier, pp 16-40.
[72] Ibid., report of the committee, p iii.
[73] *CH*, 9 May 1905 Smartt advised parliament that the government would not finance Thebus as they could not be sure it would provide a stable return. CPP, G34-1908 - Kanthack reported the project was cancelled in August 1907 because of the lack of viable markets to guarantee a secure settlement.
[74] F. Kanthack, 'Irrigation Development in Cape Colony', p 657.
[75] 'Deputation to Smartt: Land Settlement'.

accumulation, enabling the more enterprising and successful members of the community to eventually leave the colony and take up farming on their own account.[76] In 1907 the government endorsed Kakamas by granting a loan of £27,000 to develop the existing furrows and accommodate 250 additional families.[77]

As an alternative to grand irrigation complexes, the government chose to invest in smaller schemes, constructed either by individual farmers or by syndicates whose combined action would enhance the value of several properties. Kanthack concurred with this policy:

> individual private and co-operative schemes offer the greatest scope for successful development, and will always be the dominating type. They are more likely to keep pace with developing market conditions and are peculiarly fitted to the development of a spirit of progressive farming, as they are much more certain of success.[78]

He believed that, in the short term at least, small-scale projects were the only viable option until people had become more cognisant of the principles of scientific irrigation, communications to markets had been improved and government finances strengthened. An American style Reclamation Act, Kanthack argued, was inappropriate for the Cape. Much of the crown lands here had already been alienated, and the cost of materials and labour would make the incumbent redemption payments prohibitive when compared with the situation in the United States or India. Instead, the Director of Irrigation believed that the current emphasis should be on damming floodwaters and excavating boreholes.[79]

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[76] For details on Kakamas, see CPP, G39-1904: Report of the Agricultural Assistant, Annexure 7; CPP, G39-1909: Robertson Irrigation Conference, Annexure H.
[77] CPP, G34-1908: Report of the Director of Irrigation, p 9.
[78] F. Kanthack. 'Irrigation Development in the Cape Colony', pp 656-657.
[79] Ibid.

Consequently, the state continued to provide advice on the construction of irrigation works together with financial assistance. This form of assistance had been in place since 1877. Since then the terms on which loans were based had been revised and they were further simplified in the Irrigation Act of 1906. Advances were made to farmers at a rate of 3 ½ per cent interest and repayable over a period of 40 years. The surety for the loan was raised from 50 per cent of the value of the property to two-thirds of the enhanced value of the land. A customs rebate was offered on imported dam building materials as well as on oil used for steam pumped windmills. The government also abandoned the compulsory perusal of irrigation plans for requests under £500, since resentment at having to submit proposed schemes for official censure had constituted one of the main criticism levied against the 1877 Act. [80] Smartt and Gordon, the principal authors of this legislation, hoped that these proposals would enable a larger number of farmers to take out the loans and that the reduction in official supervision would make the formalities less onerous.

Coincidentally, to encourage water boring, the government reduced the number of state owned drills used to prospect for water on individual properties, and permitted people to appoint their own contractors, subsidised on a pound for pound basis.[81] Private enterprise was associated with a more efficient way of opening up the country to agriculture. A major complaint of farmers had been that they had had to wait years for a government drill, which they could then only retain on their property for 36 days for the digging of a

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[80] CPP, G39-1909, Annexure E.

[81] This was recommended in the report of the Select Committee on Water Boring – CPP, A12-1904. The number of state owned drills was reduced from about 48 drills to 6 between 1903 and 1908. B. Ritso's report for 1907 (G12-1908, Section 7) showed that the number of private contractors in operation increased from 42 in 1904 to 102 in 1908.

maximum of three boreholes, which might ultimately fail.[82] Some of the more enterprising and affluent agriculturists made alternative arrangements. Walter Rubidge, for instance, formed a syndicate to procure a jumper drill from the United States which he then hired out to neighbouring stock farmers in Bechuanaland who were eager to prospect for water.[83] Eventually the role of the water-boring department became defined as responsibility for experimental drilling and the search for subterranean supplies in hitherto unexplored areas where inhabitants were reluctant to undertake the financial risk.[84] Like the Agriculture Department, the Department of Public Works functioned as a source of information collation and dissemination, leaving the everyday practice of rural development to the farmers themselves.

Although the emphasis of the colonial state was to encourage water boring on the part of white farmers, there is some evidence to suggest that African communities were not totally excluded from this policy. In October 1902 Harry Mtombeni, on behalf of the Hackney Mousa Village Management Board, which formed part of the Oxkraal location near Queenstown, requested the use of a government drill in order to prospect for water in the location. He suggested that 'this would be the best thing which the Government could do for us here'.[85] Mtombeni successfully managed to attain this tool on payment of his community's financial liability towards its hire. The Public Works Department was prepared to subsidise the cost of drilling on the same

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[82] Public Works Department Notice 827, 1902, *Government Gazette* 19 November 1902.
[83] CPP, A12-1904: Evidence of W. Rubidge, pp 11-16. In 1904 a star jumper drill from the United States cost £550 to £600.
[84] CPP, A12-1904. This was endorsed in the final report of the select committee on water boring and advocated by B. Ritso.
[85] CA, NA569, A1147: Letter from H. Mtombeni to J. Frost, Secretary of Agriculture, 16 October 1902.

terms as that offered to settler farmers.[86] W. Cumming, the Secretary to the Native Affairs Department, regarded this as an opportunity to demonstrate to Africans the potential benefits of water boring in the reserves.[87] A similar agreement had been arranged the previous year with the Village Management Board at Kamastone, also in the Queenstown district.[88] Hence the loaning of a drill to Mtombeni does not appear to have been an isolated event. However, residents of both Kamastone and Hackney Mousa were warned that, just like settler farmers, they would have to wait up to two years before the equipment was likely to arrive on their premises.[89] Thus although the state was not prepared to directly tackle the issue of erosion, and despite the fact that the number of drills in its possession was hopelessly inadequate, the government seemed to recognise the need to improve water supplies in the locations in order to improve their agricultural viability.

(4.4) Farmers and the Spirit of Individualism

The Progressive Government's promotion of a more collaborative approach to hydraulic engineering was intended to overcome some of the financial difficulties facing farmers. It was also aimed at enabling the development of more ambitious local projects, since the construction of canals, concrete dams and reservoirs was beyond the

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[86] CA, NA569, A1147: Letter from L. Mansergh, Secretary to the Public Works Department, to W. Cumming, Secretary to the Native Affairs Department, 12 January 1903. In the 1890s the state had paid two-thirds of the cost of drilling, but by 1904 this had been reduced to 50 per cent: CPP, C7-1904: Select Committee on Water Boring and Diamond Drills, evidence of T. Smartt, pp 1-4.

[87] CA, NA569, A1147, Schedule 440/A1147: Memorandum from W. Cumming to the Prime Minister, January 1903.

[88] CA, NA569, A1147: Memorandum from W. Westhofen to W. Cumming, 23 February 1901.

[89] Ibid. Also the Public Works Department, file note 6/701, dated October 1902, suggested that there were 65 applicants in the Queenstown area waiting for a government drill as only three were available for this region.

means of most individual farmers in terms of both technology and cost. However, this political ideology of collectivism, encouraged by the state as a component of national development, had to contend with the strong sense of individualism and scepticism on the part of many farmers, which diminished the overall opportunities for reifying these ideals.

By 1906 only one river board, based in Robertson, had been constituted in response to the 1877 Irrigation Act (below).[90] Antipathy was partly due to fears about the repercussions of accepting advances; a concern that was replicated in the reluctance to enter into similar financial arrangements for the establishment of co-operatives (chapter 2). Government loans engendered the threat of indebtedness and foreclosure should the project fail or the dam collapse. It was also a consequence of the fierce protectiveness towards property rights, which included access to water. The unpredictability of the colony's rainfall made many farmers especially defensive of these prerogatives both on the ground and in the courts. Litigation had played a significant role in irrigation culture since the days of the Dutch East India Company and continued to do so beyond Union.

The most publicised legal process in the aftermath of the South African War was the dispute between the Southey brothers, Charles and William, over access to floodwater from the Great Brak River.[91] This case, which was heard in December 1905, received particular attention for a number of reasons. This was partly due to the nature of the litigation which involved the question as to who had the right of ownership over an intermittent stream which did not flow all year round and was dependent on annual deluges for its replenishment. Under Roman-Dutch law perennial, or permanent rivers, which had a

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[90] CPP, G41-1906, p 2.
[91] The case was covered in detail in the *Cape Times*, 18 December 1905.

geologically defined course, were deemed the property of all riparian owners, who could appropriate as much water as they required. Intermittent streams, such as the Brak River, however, were more problematic – ownership had to be adjudicated on a case by case basis in the courts. The Southey lawsuit occurred concurrently with a national debate on Smartt's Irrigation Bill in which it was intended to define intermittent streams by statute; hence the verdict of this case could have an important precedentary role. Press coverage was also extensive because of the personalities involved: Charles Southey of Culmstock Farm, Middelburg (plaintiff) and William Southey of Varkenskop (defendant) were both well known in progressive farming circles. Witnesses included modernising ideologues and politicians such as Walter Rubidge. Both litigants employed well respected lawyers: Henry Juta, who later played an important role in defining irrigation law, and William Schreiner the former prime minister of the Cape. Political notables were petitioned to take sides. William Southey advised Merriman that: 'This is not a personal matter but a public matter. My brother's proposals would mean complete destruction of all farmers depending on flood water'. If Charles wins his case, 'My life's work in building up this fine property with all its costly irrigation works is doomed – and that without serving any good purpose'. [92]

On 15 December 1905, however, the Judge, Christian Maasdorp, found for the plaintiff. Charles Southey was a lower proprietor on the Brak River in relation to the geographical position of his farm vis à vis that of his brother. He claimed that the three weirs built on William's land had resulted in most of the floodwater from the Brak being drawn on to his brother's estate, thus depriving farmers

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[92] Merriman Papers, MSC 15, Box 25, No. 150: W. Southey to J. X. Merriman, 5 August 1905.

downstream of a supply of the freshet. The defendant argued that he had the right to take as much water as he wanted simply because he could. William Southey claimed that due to the lie of the land, floodwater could only be profitably used on his property and by inundating his own vleis he was actually invigorating underground streams on other farms through the process of percolation. William's position was defended by Walter Rubidge who accepted this hydrological explanation, despite the fact that he himself was a lower proprietor. Disputes over whether percolation was occurring or not, was indicative of the paucity of hydrological data available in the Cape, and deprived the contestants of a reference point on which a more accurate and impartial judgement on the effects of the defendant's actions could be made. William Southey failed to prove that he had enriched the lower properties, and thus Maasdorp had adjudicated that the defendants use of water had not been 'reasonable'. Following further litigation the weirs at Varkenskop were altered in order to reduce the amount of freshet absorbed by this farm.[93] Importantly, from a national perspective, the verdict helped to define the legal position of intermittent streams. The Brak was effectively classed as a perennial stream and subject to Roman-Dutch law; the water being allocated to all riparian landowners.

The verdict inspired a wave of press correspondence and was the subject of lectures at farmers meetings and speeches in Parliament. In many respects perspectives depended on whether the discussant supported the position of the upper or lower proprietors. Debate also raged over whether progress in agriculture would be enhanced or damaged by the fact that floodwaters should be equitably distributed. The Irrigation Act of 1906 reflected Maasdorp's decision. This law protected lower proprietors from being deprived of freshet usage by

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[93] 'The Southey Case', *MNKF*, 21 November 1906.

ensuring that upper proprietors could not appropriate as much as they wanted. The rationale, as Smartt argued, was to encourage as many people as possible to take up irrigation, with the security that they would have legal access to a reasonable share of the water.[94] The opportunity to augment the value of a property was not to be the preserve of the upper proprietors alone; the concept of hydraulic progressivism had a certain egalitarian aspect incorporated in this legislation. Use of intermittent water would henceforth be administered by the issue of permits granted by the river boards, with any disputes being forwarded to the water courts.

The concept of permits implied the principle of measurement. Many rivers were not gauged but monitoring distribution would inevitably mean that apparatus would have to be put in place to record both fluvial capacity and usage, thus indirectly contributing to the compilation of a hydrographic survey. Smartt suggested that 'If there was anything detrimental to the irrigation works that were being attempted in this country, it was the want of systematic knowledge with regard to the flow of streams'.[95] Regulation implied a scientific and systematic approach to distribution, which should curb wastage and facilitate the controlled utilisation of this valuable resource. Maasdorp's dictum of entitlement to 'reasonable usage' was not to be loosely applied, and rights of appropriation were to be placed under public scrutiny. In essence the legislation was a demonstration of a step towards 'national efficiency' in hydraulic management. Smartt regarded this statute as a statement of the principle that the individual should be subservient to the community, and not the other way round, as had often been the case in the past.[96] By granting people collective control over local resources, he was also trying to

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[94] *CH*, 15 June 1906.
[95] Ibid., p 152.
[96] T. Smartt address to Cradock Farmers Association, *MNKF*, 25 May 1905.

inspire a more co-operative and less individualistic approach to progressive farming and ideological identity.

However, Smartt's irrigation law was controversial from the outset and his perspective on progress was widely criticised. The heated debates emphasised the emotive nature of the water question, and manifested a diversity of views as to how irrigation development should be encouraged. Opinions were based on personal experience and individual expectations as to how far the state had a right to intervene in agricultural practice. The altercation highlighted the complexity of progressive ideology and in many respects demonstrated a continuance of individualistic attitudes towards rural development strategies. Walter Rubidge, for instance, uncharacteristically emerged as a vociferous critic of government interference in the realms of agriculture when it came to the subject of irrigation. For Rubidge, progress in this context depended on people with initiative and capital investing in the land. Success at Varkenskop would not have been possible, he claimed, had William Southey not been able to take all the water he needed. The creation of river boards and water courts to adjudicate the distribution of water, he regarded as a hindrance rather than an incentive for irrigation development. Bureaucrats had drawn up the Irrigation Bill, when it should have been the inspiration of practical farmers.[97] In Parliament, members of the opposition supported Rubidge. Gysbert Maasdorp, representing Graaff Reinet, claimed 'If they began to limit the people to a certain quantity of flood water they would not be able to construct works, because they would not know what they would get'.[98] Johannes Schoeman, from Oudtshoorn, directly placed the individual above the community and

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[97] *CH*, 16 June 1906, p 355.
[98] Ibid., pp 358-359.

declared that 'every farmer should be allowed to use as much floodwater as possible'.[99]

Landowners from Oudtshoorn emerged as the most adamant and eloquent body of opposition to changes in the irrigation laws. Here many disputes over extraction from the Olifants and Grobelaar Rivers had already been resolved through the courts. Water was allocated on a rotational basis, which was considered the most equitable form of distribution. Disputes often occurred when property changed hands or was sub-divided or leased out to tenants. Then the whole balance of allotment had to be re-negotiated. [100] The president of the Oudtshoorn Farmers Association, the successful ostrich farmer, Edwin Edmeades, emerged as a persistent defender of the rights of individuals to make their own decisions as to how water should be managed. He objected to the fact that farmers had to form irrigation boards in order to be able to attract subsidies for development. These boards would contain a magistrate or government nominee, regarded by Edmeades as an infringement of local autonomy. He wanted no water bailiff monitoring how much water people used. Nor did he want the creation of a water court to deal with disputes over water allocation. Such boards would fail to be impartial because 'you might get a brother, perhaps, sitting on judgement over another brother, or may be guarding a brother's interests'.[101] He adamantly proclaimed that he was not going to allow 'The Director of Irrigation, or his substitute' to 'slip in and play the autocrat over him'. 'That sort of thing might go down in India, but he was perfectly sure it would not wash with such pig-headed, hard-headed people as the Briton and the

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[99] Ibid., p 354.
[100] 'Rural Cape Colony – Oudtshoorn', *AJCGH,* vol. 27 (September 1905), pp 343-382.
[101] CPP, A9-1905: The Select Committee on the Irrigation Bill, evidence of E. Edmeades, p 55.

Boer'.[102] Edmeades informed the select committee convened to discuss the proposed irrigation bill that Oudtshoorn should be exempt from the bill. [103] Farmers in Oudtshoorn had already spent much money on litigation and did not welcome the prospect of established water rights being subject to the possibility of legal re-interpretation. The idea that farmers should co-operate and form syndicates to share the cost of construction was an absolute anathema to Edmeades. He concluded emphatically:

> I think people will be inclined to resent water bailiffs interfering with rights. I don't think the Act would work in our district... It would clash with our present system entirely; and with regard to storing water, I do not think it is likely in the Oudtshoorn district you are going to get a body of men to combine for the construction of irrigation works. [104]

In practice the permissive nature of the legislation left it up to local people to decide whether or not to form these statutory bodies. Individualism was demonstrated in the apathy shown towards co-operative action. According to Kanthack most of the state loans paid out after 1906 were to individuals and amounted to less than £500 each because farmers, especially in the Midlands and the Eastern Cape, still opposed official surveys.[105]

The only agriculturists who really engaged in any positive debate about the possibilities of collective planning were to be found in the Western Cape, most notably in the Breede River Valley, which included the districts of Worcester, Robertson and Montagu. The area had fertile soils and there were economic incentives to encourage

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[102] Meeting of the Farmers and Fruit Growers Association of Oudtshoorn, 31 March 1906. Reported in the *CTW*, 11 April 1906.
[103] CPP, A9-1905: Evidence of E. Edmeades, pp 44-63
[104] Ibid., p 60.
[105] CPP, G37-1907, p 9 and G36-1909: Report of the Director of Irrigation, p 9.

farmers to co-operate in the development of irrigation projects. The pedology supported mixed agriculture, although traditionally vines had constituted the most important crop. Irrigation furnished an opportunity to reconstruct phylloxera-ridden vineyards (chapter 1) and also enabled farmers to diversify either into the production of lucerne or fruitage. The rapidly expanding fruit market both in South Africa and overseas encouraged farmers to cultivate orchards in this region (chapter 2). The application of hydraulic technology to horticulture, together with the increased use of chemical insecticides to control pests (chapter 3), emphasised the extent to which fruit production was becoming a far more important economic proposition in the Western Cape, and was consequently expanding on more scientific lines.

Two of the most enthusiastic proponents of irrigation in the Valley were Hermanus van Zyl and Dirk de Vos Rabie. Both were Afrikaners and successful farmers in the districts of Robertson and Worcester respectively. They were also adherents of the South African Party, the former representing the south western circuit in the Legislative Council, the latter being the Assembly member for Worcester. Van Zyl was chairman of the Breede River Irrigation Board, which was described by the *Agricultural Journal* as the 'pioneer Irrigation Board in the Colony, and indeed of South Africa'.[106] This body had been set up in 1898 in response to a series of severe droughts. It consisted of 19 shareholders who had negotiated an equitable distribution of water and planned, with the help of the government engineer, T. Scaife, the building of a hydraulic infrastructure. A loan of £33,000 was obtained from the government to construct the 21 mile Robertson Canal together with a weir and a series of furrows to draw water onto the riparian properties of the

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[106] 'South African Irrigation Conference', *AJCGH*, vol. 34, May 1909, p 504.

shareholders.[107] Van Zyl advised his audience at the Robertson Irrigation Conference, that the average value of the land had risen from about £1 per morgen in the 1890s to £50 by 1909. This, together with the yields that emanated from the 2,500 morgen now under cultivation, would easily redeem the 40 year debt to the government. Van Zyl saw the future prosperity of the Colony as contingent on the willingness of farmers to co-operate. He specifically recommended the Hex River Valley (north of Worcester), where businesses such as Percy Malleson's Cape Orchard Company were flourishing, as an ideal location for hydraulic schemes.[108]

Hermanus van Zyl was also responsive to Patrick Hannon's recommendations for the creation of co-operative wineries (chapter 2). On Hannon's visit to Robertson in October 1905, he and Dirk De Vos Rabie immediately set up a committee to look into the possibilities of such a venture.[109] A belief in the value of promoting marketing co-operatives was thus replicated in a commitment to a collective approach to founding irrigation works. De Vos Rabie, an established member of the Western Board of Horticulture, a supporter of Rubidge's Lucerne Association (chapter 2) and reputedly one of the best brandy producers in the country,[110] was also a keen advocate of irrigation. He was a leading figure on the Nuy Irrigation Board, which had been formed in 1908 to draw water from this tributary of the Breede and regenerate an area depressed by phylloxera.[111] Some farmers planned not only to redevelop vinestocks, but also to experiment with cereal production, whilst others had branched into ostrich rearing, requiring

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[107] 'Robertson Irrigation Scheme', *SANW*, 20 June 1906.
[108] CPP, G39-1909 Annexure F. The Cape Orchard Company, which produced a variety of fruit for export, irrigated its orchards from the Hex River, however, there was no collective hydraulic developments in the valley. 'Rural Cape Colony – Worcester', *AJCGH*, vol. 27 (July 1905), pp 555-563.
[109] 'Hannon and Fuller in Robertson', *CTW*, 11 October 1905.
[110] 'Whiffs from the Cellar', *CTW*, 21 June 1905. Vos Rabie had a reputation for producing pure brandy, which retailed at about 15 per cent above the average price.
[111] 'Rural Cape Colony – Worcester, *AJCGH*, vol. 33 (November 1908).

water for their lucerne paddocks. At a cost of £16,000, farmers in the Worcester area hoped to irrigate 8,000 acres of land. Francis MacDermott, the editor of the *Agricultural Journal*, was optimistic about the potential for its success, regarded it as 'one of the most promising small irrigation schemes' in the Colony.[112]

Nonetheless, prior to 1910, these constituted the only successful schemes established through statutory irrigation boards. Although other projects were suggested, difficulties obstructed implementation even in the more collectively receptive Western Cape. This was evident in relation to the largest collaborative project proposed at that time, the construction of the Ashton Canal, near Montagu. Initially 91 farmers had expressed an interest. However, once Kanthack had drawn up his hydraulic recommendations in 1907, ten opted out because they were afraid of the cost and the fact that the redemption payments on the £500,000 loan would be passed on to the next generation. 25 farmers refused to provide adequate security because they feared foreclosure. The project thus lacked the two-thirds majority needed to establish an irrigation board under the terms of the 1906 Act.[113] In the years prior to Union, therefore, the state had major problems assuring the majority of farmers that the creation of irrigation boards was a secure proposition. Many agriculturists remained unconvinced that the eventual returns from greater productivity and raised land values would be sufficient to defray the cost of constructing highly capitalised hydraulic schemes. The issue of water rights also remained a contentious issue. The Nonna irrigation project, for example, which was intended to draw water from this tributary of the Breede River, was suspended in 1907 because of lawsuits over appropriation.[114] Individualism continued to be fuelled

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[112] Ibid., p 555.
[113] 'Ashton Canal Bill', *CTW*, 24 November 1909
[114] Referred to in 'Nuy River Irrigation System', *CTW*, 7 October 1908.

by legal and financial insecurities, which were not effectively assuaged during this period.

In practice irrigation projects in the Western Cape, were enacted by a handful of relatively prosperous farmers, such as Dirk de Vos Rabie and Hermanus Van Zyl. Both men were progressive in outlook and, together with their neighbours, had sufficient predial security to attract loans, the capital to invest in the land and thus the ability to take advantage of market opportunities. These contingencies also underpinned the rationale for larger hydraulic enterprises in other parts of the Colony.

The biggest irrigation scheme of that time, funded entirely by private capital, was to be found in the District of Britstown, on the property of the Smartt Syndicate.[115] Founded in 1895, the Syndicate appropriated Thomas Smartt's four farms in the district and later added land in Bechuanaland. Smartt engaged in mixed farming, being the owner of a pedigree merino flock as well as ostriches, and through irrigation intended to cultivate lucerne and develop a lucrative horticultural business. The syndicate provided Smartt with the security needed to obtain loans, and in 1899, the Houwater Dam, then the largest in South Africa, was completed. Political leverage was important and Smartt's support for Cecil Rhodes after the Jameson Raid brought him international capital, which enabled the construction of more ambitious works.[116] Before Rhodes death in 1902, Smartt had negotiated a loan, which by 1905 had amounted to

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[115] 'Agricultural Enterprise in the Arid Sections: The Smartt Syndicate Farms in the Britstown District', *AJCGH*, vol. 36 (March 1910) and SAL, Smartt Papers, MSB 473.3 (20): 'Short History of the Smartt Syndicate 1884-1936', 1936.

[116] Smartt had formerly been a member of the Bond and had represented the constituency of Wodehouse. In 1896 he left the Bond after the Jameson Raid and joined the Progressives in 1898.

£23,000 in advances from the Rhodes Trust.[117] In 1909 a further £75,000 was granted in the form of debentures for the building of the Ongers Dam/Smartt Reservoir, completed in 1916.[118] Access to mining capital and Rhodes's imperial networks in London enabled the building of substantial concrete dams, which would probably not have been possible in the Cape, had the Syndicate been reliant on state funding alone. The Ongers Dam was contemplated because the Houwater Dam had failed to provide a secure supply of water, the reservoir easily drying up if it did not receive at least 11 inches of rain a year.[119] The purpose of this initiative was to reclaim the veld and transform the Ongers sluit into a catchment dam eventually impounding sufficient water to irrigate 5,000 acres of lucerne. Capital also enabled him to purchase the best technical skills, including the services of both Gordon and Kanthack. MacDermott was highly impressed with the works and reckoned that 'there are few schemes in this country to compare for magnitude and confidence with that of the Smartt Syndicate'.[120]

In some respects the work of Smartt and his benefactors formed part of a larger imperial vision. Alfred Milner described Smartt as a man of 'insatiable earth hunger'[121] who wished to incorporate more and more land, together with more and more technical ventures, within his domain. The records suggest that there was some friction between Smartt and Milner over the allocation of funds, the latter being wary of large dam projects, which had had a chequered history in South Africa.[122] Yet, complex irrigation schemes did resonate with

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[117] Bodleian Library, Milner Papers, MSS Milner Dep. Reel 468: Correspondence concerning the Rhodes Trust, frames 25-26, Charles Boyd, Secretary of the Rhodes Trust, to Milner, 16 October 1905.
[118] Ibid., frames 71-75:Letter from A. Milner to L. Michell, 26 September 1909.
[119] Ibid., frames 194-206: Report of John Dove for the Rhodes Trust, September 1912. The Houwater Dam collapsed after severe storms in 1918.
[120] 'Agricultural Enterprise in the Arid Sections', p 322.
[121] A. Milner to L. Michell, 26 September 1909.
[122] Ibid.

a metropolitan agenda of closer settlement and the ability to attract British immigrants to South Africa (introduction). During the early twentieth century, such a dénouement was proposed as the ultimate possibility for the Britstown project.[123] Irrigation represented the technical imprint of British colonisation not only in India and Egypt, but also in the settler colonies of Australia and South Africa.[124] The work of the Smartt Syndicate also bore the closest resemblance, at that time, to events in the American West, where the world's largest barrage, the Roosevelt Dam, was completed in Arizona in 1911. Enthusiasts of dam projects, such as MacDermott, saw the achievements of the Syndicate as a statement to others, demonstrating how an arid environment could be transformed through science and technology.

(4.5) Conclusion

A notable feature of the post bellum Cape was the considerable coverage given in the press, the *Agricultural Journal* and parliamentary debates to the whole question of curbing grassland deterioration and encouraging irrigation. After 1902 the rhetoric of degradation formed part of a progressive narrative based on the quest for rural self-sufficiency. This in turn encompassed concepts of sustainability, the conservation of both vegetation and water, and the incorporation of modern scientific and technical processes to optimise the appropriation of valuable and scarce resources. During this period there was a considerable increase in the amount of land brought

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[123] By 1912, it seems that the future role of the Smartt Syndicate had not been decided. John Dove recommended that once developed, most of the land should be sold to British farmers rather than be retained for commercial farming by the Syndicate.

[124] In Australia, in both Victoria and New South Wales, the state was trying to encourage closer settlement, using water from the Murray-Darling River Basin.

under irrigation. In 1911 it was recorded that 282,367 morgen in the Cape were farmed in this way; a 44 per cent increase on the 1904 census.[125] The entrapment of floodwater and the boring of artesian wells had increased significantly.[126] William Beinart has estimated that about 7,000 farms, equivalent to one-third of rural properties in the Cape (excluding the Transkei) had some form of irrigative system.[127] However the costs involved in constructing the more sophisticated hydraulic works, would have restricted their location to the properties of comparatively prosperous farmers with adequate capital and hypothecary security to attain loans. Progressive farmers who had been able to increase production and accumulate revenues through the adoption of modern farming practices would have constituted the main recipients of state advances. In the three years following the passing of the Irrigation Act of 1906, 141 farmers received official loans, amounting to just £81,855.[128] Three-quarters of the applications came from the Midlands and the Eastern Cape where stock farming rather than arable production predominated.[129] Economic depression affected the amount of money disbursed by the Department of Public Works, ensuring that those who had considerable predial surety would be more likely to take precedence over those whose ability to reimburse the government was less certain.[130]

Details of these developments can be found in J. Powell, *Environmental Management in Australia 1788-1914* and I. Tyrell, *True Gardens of the Gods.*

[125] UG32-1912: Union Census of 1911, p lxxiv of the report and part 9, pp 1254-1256. The figure for 1904 had been 146,085 morgen. G19-1905, p clxxxv.

[126] The number of morgen irrigated from periodic streams increased from 64,976 morgen in 1904 to 92,889 morgen seven years later. 2,168 boreholes were recorded for 1904 and 7,513 in 1911. Although, percentage wise, a greater extension in boreholes had occurred between 1891 and 1904, the increase did proceed from a very low base.

[127] W. Beinart, *Rise of Conservation*, chapter 5.

[128] Information collated from Kanthack's reports: CPP, G37-1907, p 8; G34-1908, p 28, G36-1909, p 9.

[129] CPP, G34-1908, p 28.

[130] For 1908, Kanthack reported that the total amount requested by eligible farmers amounted to £46,111, however only £12,850 was allocated. CPP, G36-1909, p 9.

Nevertheless, the Progressive Government self-consciously promoted irrigation as a vital tool for enhancing agricultural productivity. The appointment of a permanent Director of Irrigation together with a network of circle engineers reflected the growing importance of hydraulic engineering as a recognised long-term prerequisite for the expansion of both the arable and the pastoral economy. The 1906 Irrigation Law did, on paper, make it easier for farmers to collectively initiate irrigation projects with government assistance. Both this statute and the creation of the hydraulic sub-branch of the Department of Public Works also demonstrated the significance that the Progressive Government attributed to efficient administrative structures and the promulgation of practical and uniform legislation.

Irrigation laws enacted in the Cape provided a precedent for similar measures elsewhere; the Transvaal Irrigation Act of 1908 was based on Smartt's 1906 statute.[131] This transferral of hydraulic administrative structures that had first been introduced in the Colony, mirrored the adoption in the former Afrikaner Republics of the Cape's own model for a Department of Agriculture (introduction) as well as the sub-branch of forestry (chapter 5). Despite the fact that the state had been unable to persuade many farmers to combine to construct more technologically ambitious projects, the advances made in irrigation in the Cape, were nonetheless significant in establishing the Colony's hydraulic pre-eminence and the appointment of Kanthack as South Africa's first Director of Irrigation. Kanthack, like Charles Lounsbury, who became head of the Union's Entomology Department (chapter 3), and Joseph Lister who was promoted as first Chief Conservator for South Africa (chapter 5), had demonstrated his ability to contribute to colonial science and the ideology of development.

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[131] CPP, G39-1909: J. Sauer, p 23.

These appointments, to some extent, reflected the dynamism of both official experts and the legacy of the Cape government's commitment to ameliorating rural productivity.

CHAPTER V

The Conservation and Utilization of the Natural World: Silviculture in the Cape Colony, circa 1902-1908

During the latter part of the nineteenth century, silviculture as a gospel of conservation and forest management had become a subject of growing interest within the British Empire and in the United States. It was linked to notions of progress and systematic development as articulated by scientists and self-styled progressive politicians and agriculturists. It involved an augmentation of scientific and bureaucratic authority, which was not universally welcomed, and led to conflict between the protagonists of progress and those who sought to reaffirm their economic autonomy, or those advocating an adherence to traditional ways.

This chapter looks specifically at why silviculture was an important issue in the Cape after the South African War. It considers the growing influence of the Forest Department as an adjunct of the colonial state during the early twentieth century in terms of both its rhetoric and its authority. The Department underwent major reforms in order to improve its efficiency, inspired by a drive to make the Cape self-sufficient in timber. The chapter also looks at the scientific debates which revolved around issues of forest conservation, and the methods used by silvicultural experts to try to make forestry a commercially sound and viable concern. In many respects conservation had close links with capitalist development and thus impacted on the economic and social autonomy of those who had traditionally extracted silvatic resources, as well as on those who

advanced their case for customary ownership of these domains.

(5.1) The Ideology of State Forest Policy

In 1900 four authorities designated as the Western, the Midlands, the Eastern and the Transkei Conservancies administered the principal forests of the Cape. The Colony was not a densely wooded country and the paucity of timber was instrumental in promoting both conservation and afforestation. The silviculturist, Thomas Sim, claimed that only 0.21 per cent of the Cape was forested.[1] Some of the largest areas of indigenous woodland were to be found along the south coast, incorporating the George, Knysna and Tsitsikamma Forests, but woodcutters had vigorously exploited this area since the mid-eighteenth century.[2] In the Western Conservancy timber was largely limited to the highly depleted, yet valuable, cedar stocks near Clanwilliam. The acquisition by the Department of the forests of East Griqualand and Tembuland in 1890, together with those of Pondoland in 1903, gave it control of prospectively the best silvatic resources in the Colony. The most verdant areas were to be found on the coast of Pondoland, in Lusikisiki District, which due to its geographical location near Port St John's harbour was promoted as providing opportunities for 'an extensive and lucrative forest industry'.[3] By 1906 it was reported that there were 509,352 acres of demarcated forest within the entire Colony, falling under state control. Of this only 50 per cent was forested; yet, this Department, pending future afforestation projects, controlled the remainder.[4]

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[1] T. R. Sim, The Forests and Forest Flora of the Colony of the Cape of Good Hope (Aberdeen, 1907), p 1.
[2] See for example W. Immelman (ed). *Our Green Heritage: The South African Book of Trees* (South African Department of Forestry, 1973), chapters 3 and 4.
[3] CPP, G55-1903: Report of the Conservator of the Transkei, A. W. Heywood, p 141.
[4] CPP, A12-1906: Report of Select Committee for Crown Forests.

The establishment of the four conservancies in the 1880s was a result of growing publicity and concern about the transience of timber supplies, concurrent with environmental debates about the salutary effect of forests on climate and rainfall.[5] These ideas, which had been articulated in the Colony since the mid-nineteenth century, gained momentum with the introduction of Responsible Government in December 1872. Local political leaders were now in a position to introduce legislation that affected environmental policy. Foresters serving in India such as Joseph Lister and Ernest Hutchins, together with the French silvicultural expert, De Vasselôt de Regné, were soon recruited to the Cape. The agenda of these silviculturists was to inaugurate a policy of state controlled forests. Hutchins explained this rationale thus: 'State forests are the inalienable property of the State and the Country; private forests are liable to be sold according to the necessities of the owner'.[6] Demarcated forests, Hutchins reasoned, needed to be preserved for the nation for all time to provide vital timber for future generations. Private arboriculture could not fulfil this function as the time it took for trees to mature defied the normal economic rules of supply and demand. Individuals aspired to obtaining immediate profits, whereas the state could afford to conserve and sustain a continuity of supply over the longer term.[7] Colin McNaughton, who managed the Knysna Forests, believed that the 'forests must be worked in the interests of the country, and not in the interests of the immediate population'. [8] Trees were to be regarded as a national asset, and the livelihood of communities who depended on forest produce for survival was secondary in his approach to conservation.

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[5] J. C. Brown, *Hydrology of South Africa* and *Management of Crown Forests at the Cape of Good Hope Under the Old Regime and the New* (London, 1887), together with R. Grove's article 'Scottish Missionaries'.
[6] D. E. Hutchins, 'Extra Tropical Forestry', *AJCGH*, vol. 26 (February 1905), p 175.
[7] Ibid., pp 172-176.
[8] CPP, A18-1903: Report of the Select Committee on Woodcutters Relief, p 22.

It was De Vasselôt's introduction of Franco-German principles of silviculture that formed the basis of forest management in the post bellum Cape. As Superintendent of the Crown Forests from 1881 to 1891, he introduced a programme of systematic management focusing on the regeneration of indigenous forests and the establishment of new plantations. However, in many respects, silviculture, just like irrigation (chapter 4), was still very much in its infancy at the turn of the twentieth century. De Vasselôt was not replaced at the end of his contract in 1891.[9] The attitude of the government, which claimed a shortage of money, suggested that timber was not yet regarded as a potentially remunerative resource. After 1891 the four conservancies operated almost independently of each other without any overall plan for silvicultural development for the Colony as a whole. Reconnaissance was carried out, but by 1900 there were still many demarcated forests whose arboreal contents had yet to be surveyed. The working of sections was applied haphazardly and the quality and potential utility of most indigenous timbers had not been analysed. The 1888 Forest Act restricted access to these protected areas, however, as the critical report of the 1906 Select Committee on Crown Forests revealed, these regulations were largely ineffective as there were insufficient rangers to repel trespassers and poachers.[10]

Such criticisms were in part a response to the intense insecurity about the future sustainability of sylvan resources. In the early twentieth century, there was a widespread fear that the exhaustion of the world's timber supply was imminent.[11] Conservators in the United States and Australia used apocalyptic images to try to persuade their

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[9] Reports of the Superintendent of the Crown Forests are to be found in the published papers of the House of Assembly.
[10] CPP, A12-1906.
[11] These fears were articulated for example by William Schlich, Professor of Forestry at Coopers Hill, in his five volume, *Manual of Forestry* (London, 1889-1896) and by the American forester Gifford Pinchot in his book *The Fight for Conservation* (London, 1910).

governments to allocate more funds and to pay more attention to forestry. By doing so they were also advancing their own status as silvatic experts and increasing the influence of the scientific community on government policy. The American Chief Forester, Gifford Pinchot, whom Hutchins claimed to know personally,[12] argued that the United States would lose its position as the world's most prosperous nation if it did not adopt a policy of conserving its vital resources. Conservation, Pinchot emphasised 'stands for development' and it 'stands for the prevention of waste'. The 'inevitable result' of such a strategy would be 'national efficiency'. Conservation was 'patriotism in action'.[13] Pinchot was able to persuade the President, Theodore Roosevelt, of the need for greater efficiency in forest management. In 1905 the Bureau of Forestry was set up as an independent government agency. More experts were recruited to regulate output as well as to survey and plan afforestation.[14]

Similarities can be drawn between forestry in America and in the Cape after 1902. Like Pinchot, the Colony's conservators adopted a rhetoric of resource exhaustion reflecting a shared scientific and cultural agenda, which was being articulated throughout several anglophone settler states. Lister warned:

> The world timber supply is rapidly diminishing, and the time is approaching when we shall be confronted by a timber famine. At this juncture, possible in twenty five years, the state will be compelled to take up the question of silviculture on a huge scale, and then the general regret will be that the step was so long delayed.[15]

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[12] CA, FCW (Western Conservancy), 2/1/4/8: D.E. Hutchins to C. Currey, 15 February 1901.
[13] G. Pinchot, *The Fight for Conservation*, chapters 4 and 8.
[14] E. R. Richardson, *The Politics of Conservation*, chapter 2; H. K. Steen, *The United States Forest Service – A History* (Washington, 1976) chapter 4. Information on Australia can be found in J. M. Powell, *Environmental Management in Australia*.
[15] CA, AGR 709: J.S. Lister to C. Currey, 27 February 1902.

Hutchins extended the argument and advocated that the Cape should work towards self-sufficiency in timber resources. His arguments resonated with the concerns of progressive farmers who despaired of the amount of meat and dairy products that the predominantly pastoral Cape had to import (chapter 1). Hutchins claimed that since the South African War there had been a greater demand for wood to build houses, railway carriages, sleepers and wagons. Imports had doubled since 1899. In 1902 about £500,000 worth of timber, particularly pine and teak, had come from abroad[16]; by 1903 this figure had reached £727,501.[17] Hutchins suggested that £500,000 would be sufficient investment to 'settle the timber question in Cape Colony'.[18] Hutchins' statements reflected contention between the government departments over the allocation of funding. He believed that the Forest Department should take priority over that of irrigation because it afforded a more secure return, and over railways, since many of the proposed feeder lines were totally 'unproductive'. Government investment, he insisted, was essential, as 'cheap timber and fuel are an absolute necessity for the development of the country, and one of the main items required to reduce the high cost of living'.[19] The furniture manufacturer, George Scott, who advised the 1905 Select Committee on Colonial Industries that 'you can get timber from any part of the world cheaper than from the Knysna', echoed these views.[20] Hutchins advocated the completion of large plantations to minimise costs by maximising economies of scale in the hope that this would lower the price of wood.[21]

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[16] CPP, G55-1903: Report of the Conservator of the Western Cape, D. E. Hutchins, p 3.
[17] CPP, G26-1904: Report of D. E. Hutchins, p 3.
[18] CPP, G55-1903, p 3.
[19] Ibid., p 3.
[20] CPP, C2-1905: Select Committee on Colonial Industries, p 9. Scott was Managing Director of Messrs W. and G. Scott Ltd, who allegedly owned the largest joinery plant in South Africa.
[21] D. E. Hutchins, 'Extra Tropical Forestry'.

During the 1903-04 election campaign, Jameson's Party had taken up the issue of stimulating production in order to provide more plentiful and consequently cheaper goods. In this vein, both progressive farmers and politicians passionately advocated the adoption of conservation techniques as an essential strategy for ameliorating output. The question of timber conservation can, therefore, be set amidst a wider agenda, which included the conservation of scarce water supplies and the improvement of pastures for the valuable livestock industry (chapter 4). Once in office, the Progressives sought to tackle the forestry issue by calling for recommendations from a commission set up to examine the civil service and by introducing a programme of administrative reform (chapter 2). The Agriculture Minister, Arthur Fuller, advised the House of Assembly that 'in order to make a success of the forests, they must start on some plan, and that plan had been wanting in the past, but he hoped that would now be remedied'.[22]

In 1905 the fifth report of the Civil Service Commission recommended the reorganisation of the Forest Department and the creation of the position of Chief Conservator, with responsibilities for devising and co-ordinating a national programme of silvatic conservation and resource management.[23] Such a policy had been suggested by both Hutchins and McNaughton in their evidence before an agricultural select committee convened the previous year (chapter 2).[24] Thomas Sim described these measures that were enacted in 1905 as constituting the most important event in the history of Cape silviculture.[25] As in the United States, the Forest Department had become an institution in its own right and was no longer an adjunct of

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[22] *CH*, 15 August 1906, p 597.
[23] CPP, G43-1905: Fifth Report of a Commission into Public Services in this Colony, pp 10-12.
[24] CPP, C1a-1904: Report of the Select Committee on the Agricultural Department. Evidence of D. E. Hutchins, pp 79-91; C. McNaughton, pp 50-63.

the Department of Agriculture. This reflected the greater importance now attributed to timber as a valuable resource. The appointment of an overall head of department mirrored the creation of the post of Director of Agriculture to oversee the arable and pastoral sectors of the rural economy (chapter 2) as well as a Director of Irrigation to supervise hydraulic developments (chapter 4). Cumulatively, these administrative reforms demonstrated the contemporary association of bureaucratic centralisation with uniformity and efficiency.

The first Chief Conservator was Joseph Lister. Lister immediately initiated the compilation of working plans to cover all the nationalised forests in the Colony. The model for such a project came from Germany, a country that had promoted silvicultural management since the mid-eighteenth century. A key reference book of this period was the five volume *Manual of Forestry* produced by William Schlich, the German Professor of Forestry at the Royal Engineering College at Coopers Hill, near London. Schlich argued:

> Economic forestry to be successful, must be conducted on true silvicultural principles, and the yield must be so regulated, that, approximately the same quantity of material may be bought in the market every year; in other words, the principle of a sustained and well-regulated yield must be recognised. Then and then only, can adequate financial results be expected from forestry.[26]

Schlich's guide explained how to calculate the size, the yield, and the incremental rate of forests by using special gauges and algebraic formulae. These mathematical measurements formed the basis of the working plans. From this statistical data, silviculturists could work out the optimal output an area of woodland could produce. Forests could then be valued and trees sold off annually in rotational

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[25] T. R Sim, *Forests and Forest Flora*, p 90.
[26] W. Schlich, *Manual of Forestry*, vol. 3, p vii.

sections to woodcutters or timber companies. Profits would be re-invested in the land and the process of regeneration begun. New trees would be selected according to their marketability and suitability for the environment. He considered it more economic to move towards arboreal monoculture than to promote a diversity of species.

To implement such a programme for the Cape, Lister employed John Henkel, a former student of Schlich, to draw up the plans for the Western and Eastern Conservancies.[27] Those of the Midlands were devised by the Conservator Colin McNaugton, who had also trained at Coopers Hill. From this information, a picture of the Cape resources was compiled as a basis for national planning. Lister explained his long term wishes in his evidence before the 1906 Select Committee on the Crown Forests. He believed that the Cape should follow the French and German example and try to dedicate 25 per cent of the land to forestry.[28] He used this occasion to advertise what he perceived to be the best in silvicultural practice and successfully convinced politicians that forestry could only be developed if it were placed on a more secure financial footing. The post war depression had led to a reduction in government funding for forestry from £63,357 in 1904 to £40,909 in 1906.[29] Lister criticised the existing system of annual appropriations because it meant the Department could not plan long-term projects. 'We should grow plantations on borrowed money', he said, because, 'it seems hardly reasonable that the present generation should grow trees which the future generations are to benefit by, and I thought it would be desirable to plant with borrowed capital. It is really an investment'.[30] The government agreed. The 1906 Loan Bill, passed by parliament, granted the department £82,000 for afforestation. This financial endowment consolidated the

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[27] CA, AGR 763: Correspondence between J. Henkel and J. Lister.
[28] CPP, A12-1906: Evidence of J. S. Lister, p 21.
[29] 'Expenditure Under Votes, Sub-vote 77 Crown forests', *SRCGH* (1907).

centralisation of the forest service in the name of 'national efficiency' and the effective development of silvatic land management. No longer did the individual conservators have the power to regulate their own budgets. National plans for reforestation could now be worked out in the economic interests of the whole Colony, with regional interests and priorities taking second place.

An international model for forest management was thus being promoted – emanating from the European metropole and exported to the colonial periphery, where it was adapted to meet local conditions. The Cape was not a unique recipient of this transfer of technical knowledge. Ravi Rajan has concentrated on India and described the work of German silviculturists who, since the mid-nineteenth century, had administered the Indian and Burmese teak forests, which had constituted a valuable source of timber for the British navy at that time. Experts from the Sub-Continent introduced similar programmes of management and control into West Africa and the Caribbean. Even in the United States, German experts such as Pinchot's predecessor, Bernard Fernow, had contributed to the initial formulation of silvicultural policy. In all these countries, Rajan argued:

> there was a strong commitment to building a regime of natural resource management that could cater efficiently to the industrial needs of the nation. The guiding principles underlying this commitment were minimum diversity, the balance-sheet and sustained yield. Again, as an attitude to nature, the agenda of British colonial forestry, like its Continental parent and American counterpart, was unambiguously utilitarian; conservationist as opposed to preservationist.[31]

Although De Vasselōt believed that forests could be regenerated by the natural reproduction of native plants, there was little overall

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[30] CPP, A12-1906: Evidence of J.S. Lister, p 24.

attempt to preserve indigenous species in the Cape. Yellowwood, sneezewood and stinkwood were all unique to southern Africa. However, by the early twentieth century, these trees were found wanting. Based on the testimonies of the conservators, Thomas Theron reported on behalf of the 1906 Select Committee on forestry that:

> The indigenous trees are unsuitable for planting in the present exigencies on account of their very slow growth. The sole exception appears to be cedar, the most valuable of all our native trees, and maturing in about 60 years. Your Committee strongly recommend that special efforts be made to reforest with the cedar the whole area of the Cedarberg that is found to be suitable for the purpose.

Elsewhere however,

> The trees to be planted should be exotic, such as pines, firs and larches, also, many kinds of gum and other Australian woods, - the object being to secure an ample supply of timber for railways, mines and domestic purposes.[32]

The proliferation of alien species dramatically altered the landscape. The commoditisation of the natural world involved its re-organisation and the promotion of those natural resources, advocated by scientific experts as being of greatest commercial potential. The acclimatisation of new varieties of arboreal vegetation bore parallels with the investigative trials carried out by the Agricultural Assistant, Eric Nobbs, as well as by many farmers, into the introduction of exotic grasses in an attempt to transform the veld into more verdant and nutritious pasturage (chapter 2).

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[31] S.R. Rajan, 'Imperial Environmentalism' , p 153.
[32] CPP, A12-1906, p iv.

Hutchins was the most ardent proponent of sylvan acclimatisation. Although European trees had been transferred to the Cape since the seventeenth century, it was not until the 1880s that foreign seeds were planted in large quantities as a specific measure of afforestation. In the closing years of the nineteenth century, silvatic exchange networks were established not with Europe but with other anglophone settler states, based on perceived similarities in climate and topography. Hutchins was convinced that species from similar meteorological zones to those of the Cape could be successfully introduced. Hence he engaged in extensive correspondence with natural scientists in Australia and California. In 1896, for instance, he forged links with Joseph Maiden, Director of the Botanical Gardens in Sydney and advisor to the New South Wales Government, who for the next ten years provided Hutchins with a variety of local seeds for the development of exotic plantations.[33] Eucalypts such as Karri and Jarrah from Western Australia, praised because of their rapid growth rates and their resistance to drought, were introduced. Yellowwood growing at Knysna produced about 50 per cent of the Cape's railway sleepers. The rest were imported and it was hoped that eucalyptus would contribute to self-sufficiency within the railway industry.[34]

According to McNaughton, 90 per cent of the Cape's timber imports in the aftermath of the South African War were pine.[35] Consequently, considerable effort was devoted to trying to cultivate this variety in the Colony. The Cape Peninsula with its mountains and winter rainfall was considered the best area to carry out acclimatisation experiments using pines. Seeds from Europe and the United States had already been transported to plantations such as Tokai and Kluitjes Kraal, both of which had been established in the

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[33] CA, AGR 722: D.E. Hutchins to C. Currey, 7 June 1905 and 13 June 1905.
[34] CA, AGR 709: C.B. McNaughton to C. Currey, 22 January 1902.
[35] CPP, G55-1903: Report of the Midlands Conservator, C. McNaughton, p 58.

1880s.[36] Hutchins commented that 'it is easy to imagine oneself in Germany as one walks for half a day over acre upon acre of young pines, stretching over the rolling flats as far as the eye can reach'.[37] Harold Witt, who has looked at the transfer of Cape silvatic practices to Natal, has argued that this policy was tantamount to recreating a 'Eurocentric landscape' on Table Mountain. Witt was critical of the botanic destruction of the natural landscape, but reflected on the fact that at the time people were not really concerned about the move towards monoculture or its impact on the ecological environment. It was only in the second decade of the twentieth century that the Forest Department of the Union of South Africa began to question the sagacity of this policy, and argue for some protection of Table Mountain's unique flora.[38]

The introduction of exotics and the statistical calculation of yields highlighted the importance of science in arboreal management. Working for the Forest Department as a conservator or district forest officer required a scientific understanding of the silvatic environment. As Lister explained:

> there can be no question that the future success of Silviculture in the colony will depend not alone on the enthusiasm and practical experience of the Department, but more especially upon their scientific knowledge which their practical experience will enable them to apply.[39]

To this end, Lister was a key proponent of the need to establish a school for forestry in the Cape. Until 1905 silvicultural education could be acquired in Europe and latterly in the United States. Lister

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[36] CPP, G32-1895: Tokai was founded in 1882 and Kluitjes Kraal in 1884.
[37] D.E. Hutchins, 'Cape National Forests', *South African Philosophical Society Transactions*, vol. 11 (1900-1902), pp 53-66.
[38] H. Witt 'Trees, Forests and Plantations', chapter 3.
[39] CA, FCE (Eastern Conservancy) 2/2/9: J.S. Lister to C. Currey, 29 November 1904.

argued that much of the training in Europe was 'inapplicable to the peculiar conditions of South Africa'.[40] Three-year courses in Europe cost the Cape Treasury over £700. The solution he suggested was to set up a college, run for students from throughout southern Africa with a variety of courses geared to suit different forestry grades and applicable to a specifically South African environment. Hutchins supported the scheme. He argued there were no such educational institutions within the southern hemisphere and this was an opportunity to promote the Cape as a leading light in this part of the world; the college would have the potential to attract students from Australia and elsewhere. In a letter to Jameson, he advised the government as to the range of compulsory subjects that should be taught, reflecting the complexity of scientific knowledge involved in forest management by the twentieth century. Foresters, he wrote, should study the principles of South African arboriculture, as well as meteorology, botany, entomology, mycology, geology, pedology, surveying, forest law and basic engineering.[41]

The outcome of these discussions was the setting up of a forest school at Tokai in the Western Cape, initially under Hutchin's direction. Tokai was chosen because its plantation ensured that facilities for practical experience and lectures on forest management could operate in tandem. Peter Hahn, Professor of Chemistry at the South African College, taught the natural sciences.[42] The course lasted three years, covered the wide range of subjects that Hutchins had suggested, and successful candidates were awarded a diploma. In 1906 seven students enrolled: five came from the Cape and one

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[40] CA, FCE 2/2/10: J.S. Lister to the Acting Chief Clerk to the Secretary for Agriculture, 31 July 1905.
[41] CA, PMO 198, file 125/05: D.E. Hutchins to L. S. Jameson, 26 February 1905.
[42] 'The Beginning of Forestry Education in South Africa', *Journal of South African Forestry Association* (hereafter *JSAFA)* vol. 2-3 (1939).

each from the Transvaal and the Orange River Colony.[43] Applications from outside the Cape were a result of the growing rapprochement between the four colonies, which were to become the Union of South Africa in 1910. As part of his policy of anglicisation, Alfred Milner had invited Lister and Hutchins to organise the establishment of a forestry service in the Orange River Colony and Transvaal respectively. Cape foresters were subsequently employed to run these departments on the Cape model, demonstrating the transferral of the Colony's bureaucratic structures to other parts of the region (introduction). Lister applauded: 'It is a matter for congratulation that the Department found itself in a position to supply experienced and competent forest officers for these posts, for it will mean a uniform system of sound forestry throughout South Africa'.[44]

Despite the emphasis in the contemporary literature on the commercial and utilitarian value of forests, there were those who argued that reforestation was also vital for the agricultural survival of the country. With the exception of the south western coastal districts, much of the Cape is semi-arid by nature and consequently the conservation of water was a principal concern (chapter 4). From the 1850s botanists such as Ludwig Pappe and John Croumbie Brown had postulated a link between the extent of arboreal coverage and the Cape's rainfall (chapter 4).[45] This debate was continued into the early twentieth century. One question put forward was whether forests, especially those located in mountain areas, actually encouraged rainfall by improving local temperature and moisture ratios in the

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[43] CPP, G39-1907: Report of the Chief Conservator of Forests, J. S. Lister.
[44] CPP, G26-1904: Report of J. S. Lister, p 76. In 1903 K. Carlson became the first Conservator in the Orange River Colony and C. Legat was transferred to the newly formed Forestry Department in the Transvaal. Tokai was closed in 1911 and re-opened a year later to train people for the lower forestry grades, such as rangers. Rhodes scholarships were used to pay for the training of students intended for the posts of conservators and district forest officers at the Oxford School of Forestry. 'The Beginning of Forestry Education'.
[45] R. Grove, 'Scottish Missionaries'.

atmosphere.[46] Some commentators were more sceptical as to whether trees attracted precipitating clouds, but proposed that they did play an important role in determining the way rainfall was absorbed into the ground. According to the historian Michael Williams, most American scientists had dismissed the idea that trees increased precipitation by the twentieth century.[47] In the Cape however, debate still raged. Unlike the United States, details as to meteorological conditions in southern Africa were very sparse. There was no mechanism for systematically accumulating and recorded data in order to analyse climatic changes over a long period of time. According to Hutchins, even poorer countries allocated more funding to this branch of research: 'At present our meteorological organization is one of the worst in the world. We spend on it about one-tenth as much as does Mexico', he complained.[48] A lack of statistical data as a basis for national planning was a general critique of several scientific advisors, including the hydraulic engineers who bemoaned the absence of a hydrographic survey (chapter 4).

Both silviculturists and farmers aired opinions on the correlation between forests and precipitation. Defenders of state forests argued that trees encouraged rainfall in order to provide further justification for afforestation. Before the 1906 Select Committee on Crown Forests, for example, Augustus Adendorff, the Member of the Legislative Assembly for Beaufort West, attributed declining precipitation in the Stockenstroom District to the effects of deforestation. He blamed African communities who were allowed to

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[46] For example, C.C. Robertson, 'Forestry and Climatic Influences', *AJCGH,* vol. 34 (March 1909), pp 249-253

[47] M. Williams, *Americans and Their Forests: A Historical Geography* (Cambridge University Press, 1989), p 386. Drought struck America in the 1890s. Although there was a popular demand for reforestation, Williams argued that meteorological data suggested there was no real link between rainfall and forestation.

[48] D. E. Hutchins, 'The Rain Winds of South Africa', *AJCGH,* vol. 23 (July 1903), p 86.

collect fuelwood from the Katberg Mountains and white foresters who had not replanted the slopes with trees. As a consequence, he claimed riparian landowners had experienced a 50 per cent decline in rainfall over recent years. To try to give his opinions greater credence he supported his statement with references to 'reliable authorities' and 'one of the foresters', an expert, who had endorsed his premonition that one-day this district 'will become a barren wilderness'.[49]

Lister, on the other hand, believed that the decline in water in the Stockenstroom District was not due to deforestation but to 'the severe drought', which had affected the entire country. However, Lister did concede that forests played an important role in preventing erosion and could influence overall water levels.[50] Scientific officers such as the Director of Irrigation, Francis Kanthack, as well as Thomas Sim, argued that forests caused rain to fall more frequently and in manageable quantities, whereas in cases where land was denuded, the water tended to flow in heavy torrents, washing away fertile alluvial soils and flushing them out to sea. Both writers were convinced that woodlands could arrest the process of erosion and sluiting, which were key concerns of progressive farmers at that time (chapter 4). The crowns of tress and the humus layer on the ground reduced 'run-off' and encouraged the absorption of water and its eventual percolation into perennial and intermittent streams, whilst the roots of trees helped to hold the soils together, curbing the extent of erosion.[51]

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[49] CPP, A12-1906: Evidence of A. Adendorff, p 57.
[50] CPP, A12-1906: Evidence of J. S. Lister, p 8.
[51] See for example, F. Kanthack, 'The Destruction of Mountain Vegetation: Its effects upon the Agricultural Conditions in the Valleys', *AJCGH*, vol. 33 (August 1908), pp 194-204; C. C. Robertson, 'Forestry and Climatic Influences; T. R. Sim *Forests and Forest Flora*, chapter 5; C. C. Henkel, *History, Resources and Products of the Country Between Cape Colony and Natal* (London, 1903), part 9.

For Hutchins, however, the issue was far more complex. His arguments suggested that some of the assumptions made about the benefits of arboreal coverage were beginning to be contested in the Cape as well as in the United States. It was not inevitable, he reasoned, that forests improved climate. Some trees in fact could have a very deleterious effect on water levels. Hutchins was already aware that certain species, such as the fast growing Australian eucalypts, could be a liability during periods of drought, as they tended to consume more water than they helped to conserve and also starved the ground of nutrients. His solution was the implementation of a careful botanic investigation to ensure that the right plants were transplanted to the appropriate ecological environment. Blue gums should be limited to cool damp areas, their function being to produce timber only. Citing European alpine models, Hutchins advocated the cultivating of pines on mountain slopes to curb erosion and protect water catchment areas.[52] The Colony's silviculturists and hydraulicians reaffirmed their statements by quoting statistics and details of international research projects to try to give their arguments greater credibility. This highlighted the fact that silviculture, like hydraulic engineering, was still a relatively new and untried science in the Cape (chapter 4). By promoting foreign practices, however, these technocrats, who themselves had had international experience in India and Europe, were hoping to encourage farmers and politicians to adopt western notions of progressive technology in order to manage their environment in a more protective and productive manner.

[52] D.E. Hutchins, 'Cape National Forests', pp 53-66.

(5.2) Public Reception of these Policies

Silvicultural regulations had a significant impact on the people who lived and worked in the forests. Conservation and state management involved restricting access to these resources and was indicative of the growing powers of the colonial government. Rural populations from the Atlantic to the Umzimkulu protested about incursions form the Forestry Department. Kanthack summed up the hostility thus:

> The enlightenment of the forest officers is naturally in advance of that of the public, who look upon the Forest Department as an unsatiable ogre, which is ever seeking to grab more and more land, much of which is unsuitable for profitable tree growing.[53]

Members of both political parties contested the role of the Forest Department and the extent to which land had been brought under its control. The 1906 Select Committee on Crown Forests, for example, portrayed the tensions that existed between the conservators and influential farmers over access to land. In part, the underlying agenda was optimal land use rather than an attempt to deprive the Forest Department of acreage. Two members of the Legislative Assembly, the Progressive representative from Albany, William Thomas, and the opposition politician, Dirk Van Zyl from Clanwilliam, demonstrated this position. Reflecting on the Alexandria Forest, Thomas argued that the only area where trees could grow successfully was on the coast. Here there was adequate rainfall and sandy soils, which were particularly conducive to good drainage and productive arboriculture. Land that had been demarcated inland should, he remonstrated, be released for grazing to make best use of the economic opportunities of the area. Farmers had submitted petitions to the government

requesting the right to purchase this land, but these had all been rejected.[54] Van Zyl complained about forest policy in the Cedarberg. Cedars only survive at certain altitudes, yet the Forest Department had appropriated both the lower and upper reaches of these mountains. According to Van Zyl the lowlands were being misused. They were unsuitable for cedars, but ideal for fruit and tobacco. Communications to local markets were good and citrus culture, he believed, could be a very successful business there. At the same time, the poorer pastoralists were totally dependent on these slopes for grazing their stock. Animals do not eat cedar, Van Zyl, claimed because of its strong unpleasant taste; thus there was no danger of browsing. Yet, without access to this land, the poor 'must trek away' in search of pasturage. Good land management, in his opinion, involved small rather than large plantations, which should be properly sustained through replanting and adequate protection from destructive agents such as fire.[55] As with many aspects of agricultural policy, the question as to how the rural economy should be developed was a problematic and controversial issue for members of both political parties. Many settler farmers and politicians, including those who saw themselves as progressive, did not always offer unequivocal support for the way silvatic conservation was practised on the ground, and they proposed alternative solutions for optimising the economic potential of the agricultural environment.

Nonetheless, it was not primarily rural politicians who articulated concerns about the management of the demarcated forests. The self-employed poor white and coloured woodcutters who eked out a living in the Knysna and Tsitsikamma woodlands felt their livelihoods were under threat due to the restrictions imposed by the

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[53] F. Kanthack, 'The Destruction of Mountain Vegetation', p 196.
[54] CPP, A12-1906: Evidence of W. Thomas, pp 72-79.
[55] Ibid., evidence of D. Van Zyl, pp 139-143.

Forest Department.[56] In 1903 a Select Committee was formed to hear the grievances of men from Knysna. They complained that they were prohibited from being able to fell adequate wood to make a living. The system of economic management involved the division of the forest into sections. Since 1888 two sections were opened for felling each year to enable the other areas to regenerate.[57] Lumberjacks needed to have a licence to operate in the allocated sections. Large companies such as Thesens bought up many of these permits at the start of the season. Thesens employed some of the woodcutters, but others were deprived of their customary work.[58] Some supplemented forestry with transport riding or farming. A bushcutter-cum-farmer from Knysna, Johannes Barnard, explained that it was impossible to survive without this extra income. To farm, woodcutters had to defray 2s 6d for a permit but were not granted title to their land. Yet cultivation was difficult; soils were poor, there was a lack of manure and draught animals. Without legal tenure there were little opportunity or incentive to attempt to invest in the land. According to Barnard, woodcutters wanted to be independent of the merchant companies to whom many were in debt. Merchants were regarded as greedy speculators who deprived bona fide inhabitants of work, and employed cheap labour, for example unemployed fishermen who had migrated from the coast due to piscine shortages.[59] Some woodcutters, such as Fred Darmant from Humansdorp had ceased felling, because the work simply did not pay once the obligatory chopping in sections had been

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[56] In 1911 the population of Knysna was estimated at 18,623. In 1913 legislation was introduced for the compulsory registration of woodcutters. 17 per cent of the registered population were classified as 'coloured'. Details from A. Grundlingh 'Poor White Woodcutters in the Southern Cape Forest Area 1900-1930' in R. Morrell (ed). *White But Poor. Essays on the History of Poor Whites in Southern Africa, 1880-1940* (Pretoria, 1992).

[57] CPP, A18-1903: Evidence of F. Darmant, pp 56-64. Before 1888 woodcutters could fell trees of their choice.

[58] Ibid. Further details on the management of the forest were provided by the MLA for George, Hendrik Van Huyssteen, pp 2-10.

[59] Ibid., Evidence of J. Barnard, pp 30-47.

introduced.[60] Underlying the anxieties of the woodcutters was a resistance to proletarianisation. Albert Grundlingh has argued that despite the underlying poverty facing many of the forest's denizens and the arduous nature of their work, numerous woodcutters prized their economic independence and did their utmost to maintain it. [61]

The conflict between individual woodcutters and big business mirrored similar changes in economic structures to those that had occurred on the Kimberley mines 30 years before. Rationalisation, the creed of economies of scale and of monopolies, concurrent with investment in costly machinery rather than manual labour, was a feature of the late nineteenth century economy. The largest company operating in Knysna, Thesens, had been founded in the 1870s. They owned the sawmills and the creosoting plants, bought up the sections and traded as merchants. Effectively they monopolised the timber of Knysna just as De Beers controlled the diamonds of Kimberley.[62] Further east, timber production in the Tsitsikamma Forest was dominated by the Mangold Bros. based at Storms River.[63] The conservators displayed very little sympathy with the plight of the woodcutters and supported capitalist modes of production. Lister stated, 'I don't see how they could earn more money from the forest, because I consider that the employment of modern machinery is bound to kill and entirely oust the small woodcutter'. [64] He opposed the suggestion that the government should help the poor bushcutters by providing employment in a state owned sleeper factory, 'I consider we cannot do it as cheaply as it can be done by private contractors'.[65]

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[60] Ibid., Evidence of F. Darmant, pp 56-64.
[61] A. Grundlingh, 'Poor White Woodcutters'.
[62] For information on Thesens see, for example, A. Grundlingh 'Poor White Woodcutters'.
[63] CA, AGR 694: Petition and Correspondence Involving the Tsitsikamma Woodcutters, 1904.
[64] CPP, A18-1903: Evidence of J.S. Lister, p 53.
[65] Ibid., p 53.

The views of the local conservator, McNaughton, revealed that Victorian interpretations of poverty continued in the Cape well into the twentieth century. By this time, some political and social thinkers in western Europe, the United States, as well as in southern Africa were prepared to accept that poverty was not necessarily the fault of the individual.[66] McNaughton however attributed poverty to the Victorian anathemas of sloth and lack of thrift. The younger generation, he argued, should be forced out of the forests and made to work on neighbouring white farms where there was a great demand for labour. Coloured woodcutters were prepared to work on the plantations and till the ground. However, he alleged the idle whites would not engage in manual labour at all. He opposed the use of poor whites in the sleeper industry describing it as 'a sort of government philanthropy'.[67] McNaughton believed that the timber industry should be managed on commercial lines and should not constitute a non-profit making public works scheme. His solution to 'poor whiteism' was to limit felling to registered workers. To obtain the necessary permit, the applicant should be a bona fide woodcutter who had lived in the forest for over three years. The number of licences issued would be restricted to ensure sustainable yields. Older men should be given priority over younger and companies would only be able to employ registered woodcutters. Like Lister, McNaughton supported capitalisation as sound business economics. The woodcutters would effectively lose their economic autonomy and become the 'servants' of large companies. By attempting to force out young men, he ultimately intended to divide the utilisation of the forest between the scientific management of the conservators and the commercial rationalisation of

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[66] C. Bundy, 'Vagabond Hollanders and Runaway Englishmen', in W. Beinart et al. *Putting a Plough to the Ground.*
[67] CPP, G50-1906: Report of C. B. McNaughton, p 54.

the companies.[68] This suggested that in spite of public concerns about 'poor whiteism' (chapters 1, 2 and 4), the survival of a community of economically independent woodcutters was not favoured by the state, as their continued existence challenged both the logic of the conservators and the profitable working of the forests.

As an alternative, the government investigated new ways of developing this impoverished part of the Colony. Poor communications inhibited the movement of timber and other goods to market. In 1904, the Commissioner of Public Works, Thomas Smartt agreed to subsidise a private company, which was planning to build a two-foot narrow gauge railway connecting Knysna's harbour and forests with the hinterland.[69] In the meantime, Eric Nobbs, was sent to the area to examine its potential for agricultural development. His report provided an interesting insight into how these isolated communities were perceived to operate vis à vis the modern world. The inhabitants, Nobbs argued, were reluctant to change from forestry to agriculture, even though the former rarely paid a subsistence wage. Many were in debt and could not afford the initial outlay in developing fields and pastures. Sharecropping arrangements operated along the coast, a form of land holding which he regarded as regressive because it discouraging a capitalist approach to farming through investment in the soil. The area was plagued by redwater and cattle suffered from *lamziekte*. People were uneducated, many had never heard of the Agriculture Department or the work of its advisors. Opposition to scientific modernity was tangible. Nobbs corroborated the views of the Veterinary Department by suggesting that many farmers were suspicious of inoculation programmes for stock diseases such as redwater (chapter 1).

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[68] McNaughton's view is constantly reiterated in his evidence before the Select Committees of 1903 and 1906 and in his annual reports.
[69] *CH*, 23 May 1904, the South Western Railway Bill was passed by Parliament.

He recommended that the government addressed the situation by developing the infrastructure, encouraging education and establishing experimental stations on the American model. A scientific approach was promoted as being able to transform a sterile landscape into a prosperous farming environment. Nobbs believed that the *sourveld* could be rendered fertile if experiments were carried out to analyse the chemical composition of the soil, see which crops grew best in these conditions and which fertilisers encouraged growth. He also saw education as vital for bringing about a change in attitudes amongst the young, the hope of the future. Agricultural demonstrations were proposed to show people how to use ploughs, select crops and manures, create paddocks and rear healthy stock. Without the application of science Nobbs concluded development in this area was impossible.[70] An experiment station was set up in Knysna (chapter 2) and the outcomes of Nobb's experiments were published in the *Agricultural Journal.* The plight of the woodcutters however, continued to be a major issue throughout this period, indicative of the determination of these communities to resist capitalist modernity and outside challenges to their traditional way of life.

Africans too resented attempts to restructure the use of the rural environment. In the Eastern Cape and the Transkei exclusion from the demarcated woodlands was a very emotive issue. The forests had constituted a source of building materials, fuel, fruits, medicinal herbs and provided browse and pasturage for livestock. Wild animals were hunted here for sport and for protein. Traditionally access to the forest had been freely available to the local people who could extract produce according to their needs. With the arrival of the colonial foresters, silvatic resources that had customarily been viewed as the

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[70] CA, AGR 762: E. Nobbs's Report on Conditions at Knysna, 12 July 1904.

free gift of nature were transformed into commodities, which were granted a monetary value, and access to which was restricted by law.

Forests in the Eastern Cape and the Transkei consisted of both demarcated and undemarcated woodlands. In the latter areas, chiefs and headmen, rather than the Department of Forestry, were responsible for the allocation of resources from the commonage. Headmen were granted an annual permit that enabled them, and their community, to extract firewood, wattles and kraalwood for personal use, free of charge. Yet even here Africans were not allowed to chop certain species of trees, which had been given a particular commercial value by the conservators.[71] In the demarcated forests, on the other hand, although it was still possible to collect firewood from the scattered twigs and branches on the forest floor, the use of axes to fell trees was prohibited. Hence people were forced to pay for any additional timber that they might require. In 1906 the tariffs imposed on wood extracted from the demarcated forests, ranged from three pence for a bundle of wattles to five shillings for a wagon-load of kraalwood.[72] The previous year, the Progressive Government's Minister of Native Affairs, Walter Stanford, announced, on the part of the Forest Department, his intention to introduce a series of charges for the removal of produce from the undemarcated forests too.[73] However, this policy was abandoned in the wake of the Bambatha Rebellion, which erupted in Natal in 1906.[74] During this insurrection, Bambatha, a deposed Zondi chief, built up an army within the

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[71] These trees were scheduled in the Forest Act, number 28, 1888.
[72] *Government Gazette* (March 1906), p 504.
[73] CA, AGR 707: 'Forest Produce from the Undemarcated Forests in the Transkeian Conservancy'. W. Stanford to the Secretary of the Native Affairs Department, 5 April 1905. The tariffs were meant to come into effect on 1 January 1906. Headmen were promised 10 per cent of the revenue in return for enforcing the levies. The argument was that Africans were wasteful of resources because they were free.
[74] CPP, G24-1910: Report of the Chief Conservator of Forests, p 21.

Nkandla Forest in southern Zululand to fight against colonial rule.[75] Consequently the organisation of an African rebellion, to some extent, became located in the settler psychology with clandestine activities in the forests; a fear that was given greater credence in the Cape as a result of demonstrative opposition to the silvatic regulations (below). This insurrection therefore ensured that African communities could retain some access to free resources. Nonetheless, when available supplies were inadequate, Africans were forced to purchase wood, either from the demarcated forests, or from the wattle plantations that were being established for their use.

As well as being forced to pay for certain timber resources, Africans were banned from pursuing game in the forests without acquiring a licence costing 10 shillings for each hunter. These levies, which applied to both the demarcated forests and the commonage, had been introduced in the 1890s, not only for financial reasons, but also because the conservators were keen to protect wildlife as well as woodland (chapter 6).[76] Permits were also needed for the cultivation of crops or the grazing of stock within the confines of a demarcated forest. These licences were often expensive and designed specifically to raise money for the government. A variety of grazing servitudes were in operation. In many areas an annual rate was charged per beast. The usual levy in the Eastern Cape amounted to £12 per annum for a horse or head of cattle and 12 shillings for a sheep. No goats were

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[75] The rebellion was supported mainly by younger men who became subject to the £1 poll tax in 1905. It was the consequence of a variety of longer term causes, such as rural dispossession, the enactment of discriminatory political, legal and social laws, together with the interference of the colonial state in the appointment of chiefs in order to create a collaborative ruling class. The revolt involved an attempt to restore the deposed Zulu king, Dinuzulu, and was brutally suppressed by the colonial army. John Buchan's novel *Prester John* reflected settler fears of mass African insurrection, a possibility that helped to promote white ethnic co-operation and accelerate political union. S. Marks, *Reluctant Rebellion: The 1906-08 Disturbances in Natal* (Oxford, 1970).

[76] CA, FCE 2/2/9: J. Lister to C. Currey, 4 April 1904. FCE 3/1/50: P. Harran to J. Lister, 3 March 1906.

allowed into the woodlands as they were particularly destructive of saplings.[77] In others districts, such as the Dontsah-Amatola Mountain region of the Eastern Cape, an agreement had been negotiated with the Resident Magistrate which enabled pastoralists to pay £50 a year to depasture an unlimited number of animals in a 500 acre area.[78] Customarily free grazing land, just like timber, had now become a purchasable commodity.

Collectively, these policies enacted by the Forest Department were highly unpopular because they challenged the traditional economic relationship between African societies and their communal woodlands. Introducing tariffs and restricting access not only to timber, but also to grazing lands and game, represented the highly intrusive nature of a colonial government that assumed the right to control the country's valuable resources, as well as dictate both their availability and their usage.

To try to justify their policies, forestry officials depicted Africans as wasteful and destructive of natural resources. They were blamed for causing many forest fires and accused of profligate use of timber in constructing their huts and kraals.[79] People fail to realise, Lister remonstrated 'the irreparable injury which the country is suffering through the wholesale and reckless destruction of vegetation on native locations'.[80] The Africans, meanwhile, offered passive resistance to the licensed and controlled use of the forests. A. G. Potter, the District Forest Officer at Butterworth, reported in 1908 how women, whose customary job it was to collect firewood, were prepared to defy the regulations and steal timber. Although women did gather dry wood from the Transkeian Forests, as they were legally entitled to, Potter

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[77] CA, FCE 3/1/58: J. Lister to C. Currey, 20 November 1902.
[78] CA, FCE 2/2/9: J. Henkel to J. Lister, 16 March 1906.
[79] See for example the evidence of Lister, Adendorff and Niland before the Select Committee on Crown Forests, A12-1906.

claimed they also retrieved and smuggled out of the woodlands, timber which men had illicitly felled with an axe.[81] Both men and women, therefore, demonstrated their opposition to the proclamations of the Forest Department, and revealed their determination to retain access and control of the resources for which they were traditionally responsible.

As well as chopping timber, men defied attempts to restrict hunting. Patrick Harran, the District Forest Officer at Keiskamma Hoek in the Eastern Cape, described how a group of about 200 men, armed with guns and assegais and accompanied by nearly 300 dogs was caught hunting without a licence at Rabula. Meanwhile, a larger party of 400 hunters invaded the demarcated forest of the Lower Schwartzwald at Kopke.[82] On occasions there were violent confrontations between huntsmen and foresters. In September 1906, for example, two foresters were shot at and injured by black hunters near the Izelini forest station in the Eastern Conservancy.[83] The Forest Department saw these incursions as a threat to their authority. Lister advised the Select Committee on Crown Forests of the difficulties he faced in prosecuting illegal hunters effectively. Africans covered their faces with clay making identification impossible. There was a lack of rangers to arrest poachers, and foresters had to rely on the will of headmen to report 'trespassers' for prosecution. He considered the fines too low to act as a real deterrent. Levied at between 10s and £1 per offender, plaintiffs could easily obtain the money to clear the impositions from his community.[84] Lister also believed that magistrates were reluctant to pass convictions and he

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[80] CA, FCE 2/2/10: J.S. Lister to C. Currey, 27 June 1905.
[81] CA, FCT (Transkei Conservancy) 1/2/1/3: Report of A.G. Potter for 1908.
[82] CA, FCE 3/1/50: Memorandum of P.C. Harran, 8 October 1907 and his letter of the same date to J. Henkel, Conservator of the Eastern Cape. The German name reflects the presence of German legion settlements.
[83] CA, FCE 2/2/10: J. Henkel to J. Lister, 12 September 1906.
[84] CPP, A12-06: Evidence of J. Lister, pp 17-18, 31.

advocated imprisonment as an alternative and more efficacious penalty and dehortation.[85] For the magistrates their agenda of keeping the peace and retaining the support of local chiefs and headmen was often more important than acquiring the gratitude of the Forest Department. This evidence highlighted some of the weaknesses of the Cape administration prior to Union. The Forest Department was under-staffed and dependent on the collaboration of chiefs and headmen, together with the co-operation of the Native Affairs Department to enforce their regulations.

Contention was not just restricted to fuel gathering and hunting rights. Africans also defied the conservators by grazing their animals without the requisite permits. In the Eastern Conservancy alone, 12,311 cattle were impounded for 'trespass', between 1902 and 1906.[86] In the Transkei, the number of (unspecified) forest offences rose from 552 in 1902 to 884 in 1903. Arthur Heywood, the Conservator of the Transkei, attributed this increase to the Department's incorporation of the Mpondo forests in 1903, indicative of immediate resistance to colonial control of the woodlands.[87] Lister also claimed that the Xhosa deliberately damaged trees. He wrote: 'A good deal of damage is done by Natives who enter the Forests to collect dry wood, and in localities frequented by them, trees are frequently found mutilated for no other reason than pure mischief or malicious intent'.[88] Whether Africans were simply using, rather than defacing, trees is impossible to specify, but in the opinion of many officials, Africans showed that they were prepared to express their defiance of the colonial state by damaging the assets that the government valued and had seized from them. Attacks on trees were symbolic of assaults

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[85] CA, FCE 2/2/9: J. Lister to C. Currey, 27 October 1904.
[86] CPP, G55-1903, G26-1904, G50-1906, G39-1907: Reports of the Conservators of the Eastern Cape.
[87] CPP, G26-1904: Report of A. W. Heywood, p 134.
[88] CPP, G39-1907: Report of the Chief Conservator of Forests, p 9.

on the 'property' of white settlers and reflected strong sentiments of economic and cultural insecurity.

On occasions, African headmen were prepared to fight to try to regain control of their silvatic heritage through the courts. A notable example of this was the case of Zondiwe Makiwane who, for 20 years, battled against the colonial state to retain title to land in the Lenye Forest in the Eastern Cape.[89] The Makiwane family claimed legal and prescriptive rights, dating back to 1863, to what they called 'common land' situated to the south of the Lenye Forest. Here they collected wood, cultivated the soil and grazed their stock. In 1885 however, the newly established forest administration, eager to establish its authority, and to access, conserve and manage the 'exceptionally fine sneezewood trees',[90] surveyed Lenye. It was decided that not only the wooded areas, but also the surrounding grazing lands, should be part of the demarcated territory, placed under state control. Beacons were erected to mark the boundaries, symbolic of the Department's appropriation of geographical space. The Makiwanes were determined to retain agricultural autonomy within their environment and contested this sequestration in the courts and defied the authorities on the ground. They refused to pay the fines imposed for cultivating mealies, grazing stock and building kraals within the forest boundaries. They destroyed beacons, demanded revised surveys and petitioned governments. In November 1906 Walter Stanford ordered an enquiry. The magisterial court subsequently adjudicated that the Lenye Forest and its environs fell within the ambit of the Forest Department's authority and declared that the Makiwanes had no legitimate right to the commonage. As a consequence, Lister ordered their eviction and removal to the Wolf River Location on 12th January

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[89] CA, FCE 3/2/3:Lenye Forest. This volume contains correspondence between District Forest Officers and Conservators with regard to the Makiwane Case.

1909. This legal process demonstrated the oppressive side of progressivism. Scientific hubris incarnate in the rhetoric of the forestry experts afforded slight regard for the rights of people and assumed the moral high ground on the basis that conservation was imperative for the Colony's economic survival. Policies were dictated by the conservators themselves and, in this case, no provision was made for a negotiated communal approach towards resource management.

This authoritarian approach resonated with an analysis of the early twentieth century encounter between the Department of Forestry and the African inhabitants of the District of Tsolo in the Transkei, as described by Jacob Tropp. Tropp has argued that the conservators acted as agents of the colonial state and adopted 'conservation paradigms previously articulated in the Cape .... for restructuring forest use in local African communities'.[91] The forests of the Transkei were appropriated and preserved for the commercial benefit of white settlers. He has also postulated that the inability of Africans to control their forests demonstrated the growing power of the colonial state and the disempowerment of indigenous people in the years prior to South African Union.[92] Nevertheless, in practice eventualities in the Eastern Cape and the Transkei were not always as clear cut as Tropp has suggested. Although there was considerable hardship for many people especially with regard to the un-negotiated loss of free access to the demarcated forests, Africans did retain control of the undemarcated areas, so exclusion from the woodlands was not total. Despite the regulations, in practice the conservators were not really in a position to prevent unauthorised hunting, grazing and wood collecting, which was manifestly demonstrated in the ability of Africans to ostensibly undermine their work. Africans were losing the right to access to

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[90] CA, FCE 3/2/3: P. Harran to J. Sim Acting Assistant Conservator of Forests, 8 February 1902.
[91] J. Tropp 'Displaced People, Replaced Narratives', p 3.

some local resources but the powers of the state were not all pervading. A presentiment that Africans might replicate the insurrection in Natal, together with the part played by Resident Magistrates, who to some extent defended the rights of blacks, ensured that the Forest Department could not always dictate, let alone enforce, its policies. In 1910 Lister complained about the weakness of the Cape state, which, in his view, was encouraging the wasteful use of timber by failing to charge for wood extracted from the undemarcated forests; but his protests went unheeded.[93] Tropp's analysis has also focused exclusively on the negative side of colonial silviculture. Yet in spite of their patronising approach, the conservators did recognise the need to provide for the timber requirements of African communities, as well as for white settlers. In this respect, they had some local support, a factor that Tropp has also failed to take into account when analysing the work of the official foresters.

Despite numerous incidents of confrontation, there is considerable evidence to suggest that there were Africans, at least amongst the ruling élite, who were prepared to work closely with the Forest Department.[94] In Pondoland, the Secretary to the Native Affairs Department, W. Cumming, described a meeting at Lusikisiki at which chiefs voiced considerable support for conservation. About the Mpondo Paramount, Cumming wrote: 'Sigcau expressed himself as in favour of the better preservation of the Forests throughout Eastern Pondoland and added that before the country was taken over he had

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[92] Ibid.

[93] CPP, G24-1910, p 21.

[94] For pre-colonial attitudes to arboreal conservation see for example: K. Showers, 'Soil Erosion in the Kingdom of Lesotho: Origins and Colonial Response, 1830s-1950s', *JSAS*, vol. 15, 2 (1989) and T. Ranger *Voices from the Rocks: Nature, Culture and History in the Matopos Hills of Zimbabwe* (Harare and Oxford, 1999).

endeavoured to reduce the destruction that was going on'.[95] Sigcau proposed that people should be made to replant any trees they felled and promised to help the authorities protect timber supplies.[96] Karl Carlson, the District Forest Officer at Butterworth, recalled how headmen often approached him for advice on how to set up their own forest reserves in their locations.[97]

Carlson sought to endorse state policy by suggesting that there were Africans who accepted the ideology and methods of western conservation. They accepted the policy of the Forest Department, which proposed that in order to save the natural forests for future generations, people should collect their building materials and firewood from the newly established plantations. In the Transkei, Heywood, commented, 'all plantations in this conservancy are to a greater or less extent wattle plantations'.[98] The planting of acacia (wattles) served two purposes. Firstly the dye, tannin, produced in the bark, was an important by-product which could be exported to Europe or used by tanning factories in South Africa. Secondly, and more importantly, the acacia was intended to build huts and kraals for the Xhosa inhabitants. Acacia was cheap to reproduce and fast growing. Traditionally, however, the local population had used supple saplings of yellowwood, lemonwood, ironwood and sneezewood to construct their homesteads. According to Thomas Sim, there were about 1.5 million blacks in the Eastern Cape and Transkei of whom about 50 per cent lived in wattle and daub huts. He estimated that each hut used about 1,000 pieces of wood and that homes were renewed approximately every ten years. Without these plantations he urged

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[95] CA, FCT 3/1/19: Demarcations in Pondoland 1902-15. W. Cumming to C. Currey, February 1903.
[96] CA, FCT 3/1/19: J. Simpson, Resident Magistrate at Lusikisiki, to W. Stanford, 9 March 1903.
[97] K. A. Carlson, *Transplanted – Being the Adventures of a Pioneer Forester in South Africa* (Pretoria 1947), p 129.
[98] CPP, G55-1903: Report of A.W. Heywood, p 147.

thousands of saplings were being destroyed each year in the construction of huts and kraals.[99] The language of the colonial state was one of Victorian paternalism. The District Forest Officer, James Sim, for instance described how people living in the Wodehouse area were suffering due to the exhaustion of local timber supplies. Forest officers believed that the Africans could not look after their environment and it was up to this Department to see to their needs by establishing plantations specifically designed to produce the types of wood the local population was told it required.[100]

In his reminiscences, Carlson assumed the credit for encouraging the Bunga to set up their own plantations.[101] Whether this was true or not, the reports of the annual Council meetings provide some insight into notions of conservation as articulated amongst an educated African élite. In 1904 a debate was held as to whether the demarcated woodlands should be run by the Forest Department or by local headmen, under the supervision of the Resident Magistrates. A resolution was passed upholding the authority of the Transkei Conservancy as the best means of protecting supplies, suggesting some support for state control of resources.[102] At the same time, the Bunga was also prepared to finance artificial forests of its own. The Superintendent of the General Council's Plantations, H. Caplen, reported in 1906 on the success of the six wattle plantations already established in the Transkei. In the same year the District Councils of Butterworth, Engcobo and Mqanduli applied for assistance in setting up their own wattle reserves. These plantations were managed along scientific lines and were intended to be profitable. In a sense this suggested that the Transkei élite had

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[99] T. R. Sim, *Forest and Forest Flora,* p 22. Sim based his information on the 1891 report by the forester, P. Harran.
[100] CPP, G26-1904 : Report by J. Sim on the Communal Forests in the Eastern Conservancy.
[101] K. A. Carlson, *Transplanted,* p 127.

adopted the European principle of conservation through plantation. At the same time, by financing and organising the administration of these projects, the District Councils were able to uphold a measure of independence from the Forest Department over the control of natural resources. Caplen was eager to promote the popularity of Council run plantations over those of the Conservancy. He was determined to show that Africans could look after their own timber supplies and claimed that as a consequence of this afforestation programme: 'The people have taken to the plantations, they have learnt how useful they are to them for many purposes'.[103] Caplen's portrayal emphasised the fact that responses to state forestry were not homogenous. The role of the Bunga in promoting scientifically planned plantations can be contrasted with the defiance displayed by those who rejected attempts by the state to license hunting, grazing and felling. Individual family and local histories, as well as expectations, provided a diverse backdrop for a medley of responses to the new silvicultural policies.

(5.3) Conclusion

During the first decade of the twentieth century the Forest Department based its policy on initiatives that had been introduced in the 1880s. However, after the South African War, a rhetoric of 'timber famine' was articulated with greater urgency in order to obtain government endorsement for further regulation and control. The Progressive Government accepted the arguments of its scientific advisors and introduced reforms, which culminated in the centralisation of the forest service, the completion of working plans and greater investment in monoculture plantations in order to maximise and sustain future yields. By 1910 there were

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[102] TTGC: Report of the Proceedings of the Annual Meeting 1904, p 14.
[103] TTGC: H. Caplen's Report for 1906, pp 23-24.

approximately 35,000 acres of plantations in the Colony to supplement the natural forests.[104] The desire to conserve indigenous woodlands brought the colonial state directly in to the lives of people who, due to their geographical isolation or recent conquest, had had little contact with government agents in the past. Cape silviculture did not operate within a cultural vacuum; it grew out of an inter-continental exchange of ideas between a European and an anglophone scientific élite. Silvatic conservation was neither democratic in its rationale nor in its implementation. Management of the sylvan environment was increasingly taken away from local people, and deposited in the hands of official experts who claimed they could manage it for the national and by implication, the greater good.[105]

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[104] CPP, G24-1910, p 4.

[105] For example of the impact of silvicultural policies in India, see for example: R. Guha and M. Gadgil, 'State Forestry and Social Conflict in British India', *Past and Present*, vol. 103 (1989); R. Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalayas'* (Delhi and Oxford, 1989); M. Gadgil and R. Guha *This Fissured Land: An Ecological History of India* (Delhi and Oxford, 1992).

CHAPTER VI

The Cultural Construction of the Wild: Notions of Conservation and Species Eradication in the Cape Colony in the Early Twentieth Century

The technological developments in firearms during the nineteenth century provided the tools that facilitated the mammalian decimation of southern Africa. In the 1890s an erstwhile British game-hunter turned conservationist commented thus on the slaughter of the last 60 years:

> Man began to wonder what their descendants of the next century will have left them in the way of sport, and in which direction the adventure-seeking Briton shall direct his superabundant energies... The world cannot much longer support the incessant waste of animal life. [1]

Historians such as John Mackenzie and Richard Fitter have noted a cultural transformation in British society during the latter part of the nineteenth century. [2] No longer was it acceptable to boast as the self proclaimed 'Lion Hunter', Roualeyn Cumming, had in the 1850s, that he had spent two hours on his wagon shooting up to 1,000 springbok during the passage of the *trekbokken* through the Transvaal.[3] Harriet Ritvo has argued that in the early part of the nineteenth century the hunter was symbolic of an idealised masculine

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1 H. A. Bryden, 'The Extermination of Great Game in Southern Africa', *Fortnightly Review*, vol. 61 (October 1894).
2 J. M. MacKenzie, *Empire of Nature*; R. Fitter (ed). *The Penitent Butchers: The Fauna Preservation Society 1903-1978* (London, 1978).
3 R. G. Cumming, *Five Years of A Hunters Life in the Far Interior of South Africa* (Paris, 1850), p 38.

process of empire building. Representing the 'march of civilisation', the hunter explored new lands, hitherto undiscovered by Europeans and formed the vanguard of Europe's conquest of Africa, justified in their terms as a 'civilising mission'. However, as animal numbers not only in Africa but also in India and North America began to decline, hunting came to be regarded as wanton slaughter, and civilisation was now equated with the conservation of the world's megafauna.[4] This change of heart was reflected throughout the British Empire in the introduction of stricter game laws and the formation of wildlife sanctuaries. The idea of creating national parks to conserve or culturally reconstruct areas of unique 'natural' beauty emanated from the United States.[5] Imperial game parks were intended as havens in which animal numbers could recover in order to provide future regulated sport for a licence-paying white, male élite. Indigenous populations found their traditional methods of hunting were the subject of censure, and increasingly they were deprived of access to faunistic resources.[6]

The Cape was not isolated from the growing conservationist ethos that was pervading North American and other parts of the British Empire. Throughout southern Africa game protection became a more important political issue towards the end of the nineteenth century. In the Transvaal the Pongola and Sabi reserves had been established in 1894 and 1898 respectively,[7] whilst the first faunal sanctuary in Natal was proclaimed at Umfolosi in 1906.[8] In the Cape itself, changing attitudes towards wildlife and the hunt were reflected

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[4] H.Ritvo, *The Animal Estate: English and Other Creatures in the Victorian Age* (London, 1987), chapter 6.

[5] Yosemite became the first state park in 1864 and Yellowstone the first national park, under federal control in 1872.

[6] For example, J. Mackenzie, *Empire of Nature,* chapters 3 and 8; W. Beinart, 'Review Article: Empire Hunting and Ecological Change in Southern and Central Africa', *Past and Present,* no. 128 (1990).

[7] J. Carruthers, 'Game Protection in the Transvaal 1900-1910'.

[8] J. Mackenzie, *Empire of Nature,* chapter 9.

in the introduction of Game Laws in the final quarter of the nineteenth century and in the aftermath of the South African War, through the founding of the Colony's first game parks.

The historiography on wildlife in the Cape Colony for this period has tended to focus on the issue of vermin, especially the role played by jackals in undermining the profits of the small stock farmer (introduction and below).[9] However, this does not constitute a full picture of the Colony's approach to either the perception, or the management, of the animal kingdom. This chapter illustrates the fact that conservation in the post bellum Cape was not restricted to the protection of water and timber supplies (chapters 4 and 5). Game too constituted important aspects of this environmental concern. The chapter considers the reasons underlying the change of attitude towards indigenous fauna and the practice of hunting from the perspective of Cape scientists, farmers and politicians. Certain indigenous species, such as elephants, zebra and a range of buck were selected for special protection. Their preservation went hand in hand with the introduction of exotics, in particular varieties of fish, which were acclimatised principally for recreational sport. The issue of wildlife conservation provides some insights into the attitudes held by the ruling élite towards both Africans and poorer members of the settler community. It highlights the problematic nature of determining which species should be protected and which should be identified as vermin, and suggests, in relation to species such as the elephant and the seal, that these classifications were neither static nor homogenous. The chapter concludes by looking at the issue of wild carnivora and the measures that were introduced by the Progressive Government to deal with this problem. These initiatives had implications not only for pastoral and piscine production, but also

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[9] W. Beinart, 'The Night of the Jackal'; L. Van Sittert, 'Keeping the Enemy at Bay'.

provide another dimension to the debates surrounding the question of state intervention in the management of the rural economy.

(6.1) A Rhetoric of Wildlife Conservation – The Sentimental, the Recriminatory and the Utilitarian

At the end of the nineteenth century a new awareness emerged within the Cape of the extent and consequences of unmitigated hunting.[10] The extinction of unique animals, in particular the quagga, together with the escalating rarity of others such as the elephant, gave rise to new ideas about the value of colonial wildlife and generated the belief that selected species should be protected. Contemporary sources demonstrated a diversity of motives for conserving game. A mixture of ethical, aesthetic, sporting, ecological and utilitarian values coloured the literature. These, sometimes conflicting environmental agendas were not peculiar to the Cape. The extensive writing on conservation in America in the late nineteenth and early twentieth centuries also revealed a diversity of opinions on the purpose of preservation. With the near extinction of the buffalo in North America by the 1880s, there was a growing demand for wildlife protection, especially from urban élites residing on the eastern seaboard.[11] Writers like John Muir and Henry Thoreau expounded a sentimental and romanticised view of nature in which concepts of wilderness, once explored and tamed, should be transformed into national parks for public recreation.[12] Their more sensitive interpretations of the natural world can be

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[10] D. and R. Sullivan, *The South African Environment* (Cape Town , 1977). In the 18th century travellers such as Anders Sparrman described the Cape's rich and unique biota. By the 19th century the impact of white settlement had already become evident. The blauwbok of the Swellendam district was extinct by 1800, the Cape lion had disappeared by the 1850s and the quagga (related to the zebra), in the 1860s.

[11] T. R. Dunlap, *Saving America's Wildlife* (Princeton, 1988), chapter 1.

[12] See for example, D. Worster, *Nature's Economy: The Roots of Ecology* (Cambridge, 1977) and R. Nash, *Wilderness and the American Mind,* (Yale University Press, 1967).

contrasted with the utilitarian ethos of foresters like Gifford Pinchot who looked upon the environment primarily as an economic resource (chapter 5).[13] Whereas Pinchot had a conservationist approach to nature and advocated the protection of species and features that had a specific anthropomorphic value, Muir and Thoreau believed in preserving, as far as possible, the rural environment in its entirety. The American emphasis on protecting landscape was copied by environmentalists in Canada and New Zealand.[14] South Africa, however, had a unique agenda when compared with that of the other anglophone settler states. Animals not scenery formed the focus of popular attention.

The Cape was influenced by the writings of the so-called 'penitent butchers' – former British big game hunters, such as Frederick Selous, who eventually became keen advocates of conservation in order to preserve animal stocks for future sportsmen.[15] In the Cape the zoologist, Frederick Fitzsimons, who expressed remorse about his own youth when he indiscriminately killed animals and birds, provided a colonial example of this perspective. Fitzsimons argued that his activities contributed to upsetting the balance of nature. The decline in species, in order to serve man's edacious temperament, he contended, resulted in a superabundance of vermin. Farmers could no longer leave it to natural predators to devour jackals, rodents or locusts. The costly use of chemicals, which was now necessary to control pests, was a

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John Muir's campaigning did much to promote the American National Park ideal and the creation of Yosemite.

[13] G. Pinchot, *The Fight for Conservation; Breaking New Ground* (New York, 1947).

[14] T. Dunlap, *Nature and the English Diaspora.* Chapter 4 refers to the creation of Banff National Park in 1885 and the Tongariro park in 1908. Both were inspired by American precedents.

[15] F. C. Selous, *African Nature Notes and Reminiscences* (London, 1908) is an example of this genre.

reflection of the ultimate upheaval of nature's equilibrium. 'Man' was responsible for destabilising the environment.[16]

The idea of a disfigured natural world was also described in the language of aesthetics. Art can be viewed as a national self-proclamation of culture and identity. An anonymous 'sportsman from Peddie' equated 'art' in the Cape with the natural rather than the fabricated. Nature was a more precious patrimony because it could never be recreated. This writer saw a conservation ethic as a prism through which the Cape presented itself to the rest of the world as a modern civilised society:

> What would it be said of a man who broke into the Art Galleries of the world and destroyed all their treasures? And yet this is just what we are helping to do or bring about in this country, with this difference. The works of art may, if destroyed, be repeated by generations of unknown artists, and possibly become just as valuable in time, but when the last of the noble species in the Art Gallery of the Great Master has breathed its last, who can repeat. [17]

In a similar vein, the farmer turned writer and politician, Samuel Cronwright-Schreiner also lamented the passing away of a natural world that could never be revived. The springbok and the vulture, creatures that had once been labelled vermin, obtained a new value when they were no longer perceived to be a threat to human colonisation. Ungulates competed with livestock for access to valuable grasslands and had consequently been the subject of farmers' culls with the expansion of the pastoral frontier. Human intervention, which had altered the balance of faunal populations, had implications for the range of biodiversity, the nature of the veld and the availability

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[16] F .W. Fitzsimons, *The Natural History of South Africa* (London, 1919), preface to volume i. Fitzsimons was the director of the Port Elizabeth museum.
[17] Correspondence, *AJCGH*, vol. 25 (October 1904), pp 472-473.

of carrion. Cronwright-Schreiner depicted wildlife as if it were a symbol of South Africa; a feature that represented something unique in the Cape's own past. Extirpation made even the most hideous creatures beautiful. On the vulture, he mused:

> With the disappearance of the game ... the vulture has practically disappeared; his food has gone..... Not lovely birds, these great flyers, when you see them at close quarters on the ground around a dead and partially devoured ox... This useful scavenger seems repulsive seated near a decaying carcass, so engorged at times that he can hardly rise from the ground. But see him in the air, and you look upon what is surely one of the most beautiful things in the world.[18]

Like many of the Cape élite, Cronwright-Schreiner associated the destruction of fauna not only with aesthetic values but also with the loss of sport. The opening section of his book described the *trekbokke* on their last recorded mass migration from the drought stricken Kalahari to the Cape. Here the ravenous springbok devoured the crops and attacked ostrich camps. Followed on their peregrinations by hordes of hungry leopards and wild dogs, the *trekbokke* provided an opportunity for a hunting extravaganza in which Cronwright-Schreiner took part. The chase could be justified because these antelopes were destroying the veld and were thus classed as vermin. A traditional economic activity was revived. The cache of skins and biltong provided an opportunity to relive the by-gone days of a frontier society. It was a pursuit that brought together scattered communities. The organisation of the expedition reflected the ideal of a more egalitarian society. The hunters killed ten buck each, Cronwright-Schreiner explained. This expedition represented a transitory act of defiance in the face of an increasingly pervasive

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[18] S. C. Cronwright- Schreiner, *The Migratory Springbucks* [sic] *of South Africa* (London, 1925), pp 26-27. (Originally published in *The Zoologist*, March 1899).

economically competitive society, a corollary of which had transformed the once open veld into rural enclosures, demarcating both private property and wealth. The text demonstrated the ambivalent position of animals in the psyche of Cape settlers. On the one hand the buck were destructive and had to be eliminated to protect human interests. On the other hand the *trekbokke* provided opportunities for sport, enrichment and an escape from the more sedentary agricultural society that emerged with the closure of the South African frontier. The publication also indicated that English colonists as well as Afrikaner could enthusiastically, as well as socially, participate in an event often associated with the economic activities of the Afrikaner *trekboer*.

Unlike many writers, Cronwright-Schreiner did not apportion blame for the decimation of wildlife to a particular sector of society. William Beinart has pointed out that recrimination for game slaughter in South Africa 'has long been a politicised issue'.[19] Many white commentators attributed the decline in fauna to the wasteful methods of African hunters who used snares and pits to track carnivores. Articles in the *Agricultural Journal*, for example, depicted the Africans as savage, wanton killers, who showed no concern for closed seasons or the protection of females and juveniles. Blacks were portrayed as primitive because they supposedly hunted merely for sustenance and not for sport. Writing in 1901 H. Bradshaw described African hunting thus:

> the native butcher will make for himself a shooting stage close to some water hole or game track, or slip through the long grasses like a snake and shoot anything that comes along without regard to age or sex.... If the native is permitted to shoot at all, it must be with a knowledge of

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[19] W. Beinart, 'Review Article', p 167.

> the fact that he is restrained by no sportsmanlike instinct. To provide himself with food is his one and only object.[20]

The accusations pertaining to Africans and wildlife resonated with the charges made by the conservators in respect of the conservation of timber (chapter 5). Conceived as incapable of protecting wildlife due to a lack of 'sportsmanlike instinct', the state assumed the right to control African access to faunal resources just as it did the silvatic. James Sim, the District Forest Officer at King Williams Town, was unusual when he proposed that Africans should have some responsibility for managing their environment:

> In my opinion the native must get a certain amount of consideration as they are keen hunters. Unless stopped by very strenuous measures (they) will hunt and on their own location I think it would be advisable to recognise this and allow regular hunts which could be controlled.[21]

Hunting was periodically discussed at farmer's conferences where Africans were customarily branded as thieves. At the Oudtshoorn Farmers Congress in 1907 hunting by blacks was effectively equated with poaching domestic livestock. Farmers supported a resolution in favour of extending the trespass laws to designate game on private property the possession of the landowner.[22] Pastoralists also demanded the introduction of 'more effective measures for the preservation of game, particularly by the imposition of a heavy tax on natives' dogs'.[23] The Agricultural Union Conference of the following year endorsed these measures but with a fiscal exemption for coursing clubs. To ensure Africans did not set up their

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[20] 'Protection of Game', *AJCGH*, vol. 19 (7 November 1901), p 668.
[21] CA, FCE 3/1/50: memorandum of J. Sim dated 3 June 1906.
[22] *AJCGH*, vol. 30 (April 1907), p 542.

own hunting societies, the coursing association vowed it would recognise no 'Coloured Club'.[24] These resolutions were a direct attack on African methods of hunting and symptomatic of an accelerated policy of racial exclusion. They also engendered the appropriation of more rural resources in the hands of the white minority who, on this occasion, tried to justify their intentions on the basis that blacks allegedly indulged in uncontrolled slaughter.

Some writers expressed their concerns about the reduction in fauna from an environmental rather than from a social or sentimental perspective. The Director of Irrigation, Francis Kanthack, for example, saw the loss of wildlife as indicative of ecological change brought about by the unscientific development of colonial agriculture. He argued that sedentary farming and enclosures deprived animals of their traditional migratory paths and resulted in the land no longer being able to sustain an abundance of game. Loss of fauna was thus associated with an official critique of settler farming together with a wider concern about telluric degradation and the declining economic viability of the rural environment. In one of his first reports he explained:

> the innumerable references to big game, such as oliphants, rhenoster and seacow, and to aquatic and marsh plants in the old names of the rivers and farms in the colony corroborates the pictures and descriptions of the vleis given by early travellers.

But now:

> In place of countless vlei covered with high grass and pools, we now see dry flats covered with scrub and

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[23] *AJCGH*, vol. 30 (May 1907), p 663. A Dog Tax had been introduced in 1889 but it was up to Divisional Councils to decide whether it would be imposed in their localities. The demand here was for compulsory rather than permissive legislation.
[24] *AJCGH*, vol. 33 (August 1908), pp 231-232.

intersected by sluits. In place of country which was formerly covered with trees and scrub we now see barren waste almost devoid of vegetation. Wild animals of the largest species such as elephants, hippopotamus and rhinoceros were plentiful in many parts of the country where it would now be physically impossible for them to exist. [25]

Other writers argued that it was not just the land, but also the fauna upon it, which constituted a valuable economic resource. Fitzsimons explained:

> It cannot be too often reiterated that considerable numbers of the animals, birds and reptiles of our country are of great economic value, and to kill them is a crime against our neighbours, and those of our kind who come after us.[26]

The viability of domesticating wild animals as an adjunct of commercial farming interested both farmers and scientists. Fitzsimons effectively dedicated the third volume of his *Natural History of South Africa* to game farming by suggesting that a wide variety of ungulates provided good meat and valuable skins, and could be practically farmed. He singled out gemsbok as a delicious food source with the added benefit of strong hides, which could be manufactured into whips and harnesses. For Fitzsimons the rearing of antelope represented a continuation of the atavistic processes of domestication which modern farming techniques, aided by advances in zoological science, could now facilitate. He referred to various individual agriculturists who had already turned to game farming such as the Van der Byl/Albertyn family from Bredasdorp, who had kept bontebok on their estate of 'Nacht Wacht' for over 70 years and the 'progressive

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[25] CPP, G62-1907: 'Sluits, their Evil and Prevention', pages 5 and 13.
[26] F. Fitzsimons, *Natural History*, preface vol. i .

farmers' of Uitenhage, who conserved klipspringer in paddocks. [27] Similarly, Somerset Playne provided details of many properties on which domestic farming and the protection and rearing of wildlife went hand in hand. These included notable members of the progressive farming élite such as William Southey, whose farm of Varkenskop was home to a large variety of game, including springbok, steenbok and blesbok. [28] Richard Rubidge at Wellwood Farm, near Graaff Reinet, kept up to 400 springbok in paddocks,[29] whilst Montague Gadd, from Cradock, experimented with the cross-breeding of *Chapman zebra* and mares, in order to try to create a type of equine that was resistant to horse sickness.[30] Aspects of progressive pastoral farming, both in terms of paddocking and methods of scientific breeding, were thus being applied to the wild.

Connected with this notion of animals as profitable commodities was the issue of domesticating wild and exotic species not for their products but for their labour. Ernest Hutchins had worked for many years in the forests of India, and had witnessed the use of elephants for transport and hauling logs. Fascinated by the possibilities of being able to do the same with pachyderms in the Knysna Forest, Hutchins expressed thoroughly utilitarian arguments to justify the survival of this species. 'At present they yield no revenue' he explained. African elephants he claimed were 'less intelligent' and 'less savage' than their Indian counterparts. Consequently 'the attempt to transform the Knysna elephant from the destroyer of the forest to the hauler of

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[27] F. Fitzsimons, *Natural History*, vol. iii, pp 9-14 and p 47.
[28] S. Playne , *Cape Colony*, pp 257-259.
[29] Ibid., p 330.
[30] Ibid., pp 608-609. Horsesickness, along with glanders, were the main equine diseases in the Cape. At that time the cause was unknown, although mosquitoes were suspected. There was no vaccine and Hutcheon recommended that farmers stable their horses at night away from low-lying areas. CA, AGR 345, F668: Memorandum from D. Hutcheon to C. Currey, 30 April 1904.

timber promises very hopefully'.[31] Hutchins was also interested in the possibility of domesticating the buffalo. Cattle as draught animals, he argued, could hardly operate in Knysna whereas the wild ox, like the elephant, would be a much more effective beast of burden. He advocated the importation of buffalo from India for both draught and milk. [32] Horses and cattle were costly and in short supply after the South African War.[33] Rinderpest, war, glanders and horse sickness had left their mark. Recourse to such fauna to solve immediate agricultural problems constituted the ultimate commoditisation of the wild to meet the immediate economic prerequisites of commercial production.

(6.2) Extinction, Acclimatisation and the Rationale of Legislative Controls

At the end of the nineteenth century, the realisation that the survival of individual species was not assured encouraged the formation of conservation societies, the most influential being the Western Districts Game Protection Association. Set up in 1886, this organisation's stated aim was 'to promote the interests of sportsmen in South Africa and to prevent the unlawful, unreasonable and unnecessary destruction of game'.[34] Subscribers included members of the Colony's scientific community, such as the one time curator of the South African Museum and amateur entomologist, Louis Peringuey (chapter 3), the zoologist and director of the South African Museum,

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[31] CPP, G29-1889: Report of the Conservators of Forests, pp 38-39. Hutchins was Conservator of the Knysna Forests from 1888 until 1892, when he was transferred to the Western Cape.
[32] D. E. Hutchins, 'The Indian Buffalo', *AJCGH*, vol. 26 (March 1905), pp 327-328.
[33] The District Rural Reports in the *AJCGH*, vol. 22 and 23 (1903), detail the shortage in domestic animals.
[34] *SANW*, 14 September 1899. Clipping from forestry file FCE 3/1/49. In 1902 the Association extended its titular brief to include 'trout' protection.

William Sclater, and the forest conservator Ernest Hutchins.[35] The interest of such individuals demonstrated a continued link between hunting and natural history. In the early and mid-nineteenth century museums had acted as centres for the accumulation of scientific information. Hunters, such as Frederick Selous had tried to justify, as well as partially finance, their hunting expeditions by collecting specimens for museums. 'I am not a hunter by nature, I am a naturalist', Selous once told an interviewer.[36] The desire to protect animal species for scientific research as well as regulated sport became an important aspect of faunal conservation. Zoology was emerging as a new specialism, manifested in the publication of the first scientific texts on the Colony's fauna in the early twentieth century.[37] The value of science was also endorsed by government statute; the 1909 Game Law enabled shooting for scientific research without the need for a licence, subject to the governor's approval. The formation of the Western Districts Game Protection Association was followed by the creation of smaller, more localised societies in the Northern and Eastern Cape frequented by landowners and sportsmen.[38] Collectively, these organisations played an important role in alerting public attention to faunal depopulation through the publication of annual wildlife censuses. They also lobbied for the creation of game reserves, based on those already proclaimed at Pongola and Sabi in the Transvaal, together with the enforcement of stricter hunting regulations.

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[35] Annual Meeting of the Game and Trout Protection Association reported in *CTW*, 7 December 1904.

[36] S. Taylor, *The Mighty Nimrod: A Life of F.C. Selous, African Hunter and Adventurer, 1851-1917* (London, 1989) p 73. The interview took place in 1875.

[37] For example, W. L. Sclater, *The Fauna of South Africa* (London, 1901); F. W. Fitzsimons, *The Natural History*.

[38] CA, AGR 307, F234: W. Wardlaw Thompson (for the Under-Secretary of Agriculture) to T. S. Palmer of the American Board of Agriculture, 20 February 1905. He listed eight additional associations: Griqualand West Game Protection Association; Sportsmen's Associations in Uitenhage and East London; local Game Protection Associations in George, Port Elizabeth, Vryburg, Mafeking and Pokwani.

Game laws were not new to the Colony. Concern was expressed about the rate at which indigenous fauna was being consumed in the environs of Cape Town from the earliest days of white colonisation. In 1669 Governor Borghorst tried to introduce a system of licences for hunting. The ineffectiveness of these and subsequent measures was evident in the fact that large numbers of species were obliterated. Animals were killed either for their economic assets such as their tusks and skins, for their meat, or because they undermined the viability of sedentary agriculture. 1669 was also the year in which the Dutch East India Company began defraying bounties for the destruction of species classified as vermin.[39] Differentiation between prized 'game' and despicable 'vermin' was a cultural construction based on a value judgement as to which species were perceived to be beneficial or deleterious to mankind. In the seventeenth century, varieties such as lions, leopards and elephants were the targets of state paid slaughter campaigns because they were seen as a threat to the lives of humans and stock, or because they trampled crops. With the gradual disappearance of the larger felines, and the confinement of pachyderms to the restricted areas of the Knysna and Addo forests, other species such as jackals and lynxes (caracals) filled the vermin vacuum and became the late nineteenth and early twentieth century targets of state sponsored culls.

State endorsement of animal protection after the South African War centred on the 'Act for the Better Preservation of Game', of June 1886. This statute, which was endorsed by the Western Districts Game Protection Society, reiterated clauses issued by previous governments in an attempt to control hunting.[40] According to G. Williams, of the Agriculture Department, this law had been introduced

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[39] N. J. Van der Merwe, 'The History of Game Protection in South Africa,, from D. Davis (ed). *Ecological Studies in Southern Africa* (The Hague, 1964).

in response to an increase in population, the cheapening of firearms and the improved communications, which facilitated hunter mobility and hence the destruction of game. Slow moving animals such as the eland and hippopotami were considered to be particularly vulnerable. In 1886 it was once again declared illegal to hunt without a licence. Extra protection was granted to species whose imminent extinction was feared. Elephants, bontebok, gemsbok, Burchells zebra and the wildebeest, were declared 'royal game' to distinguish them from the rest. An animal hierarchy was thus being defined. To shoot royal game an additional permit was required. Closed seasons were stipulated and regional dates for legal hunting were published in the Government Gazettes. The subsequent Game Law of 1899 empowered the governor to establish game reserves. [41] In 1907 the Progressive Government organised its own game census to appraise the extent of the country's faunal dilemma. This document enumerated only 26,158 ungulates of various species, 187 elephants and three hippopotami surviving in the Colony.[42] Statistical information formed a scientific basis for further conservation legislation. The Consolidating Game Law of 1909 was a manifestation not only of local consternation about falling animal numbers, but also demonstrated the impact of international agendas on the Cape's wildlife policy. Although not present at the conference, colonial conservationists were particularly influenced by the measures postulated at an international convention in London in 1900, at which recommendations for the preservation of game in Africa as a whole had been proposed.[43] This

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[40] For examples of Dutch placaats and the laws introduced by the British Governor Lord Somerset in 1822, see J. Mackenzie, *Empire of Nature*, p 203.
[41] G. N. Williams, 'The Preservation of Game in Cape Colony', *AJCGH*, vol. 29 (December 1906), pp 767-773.
[42] CPP, G23-1908: Report of the Acting Under-secretary for Agriculture, p 11.
[43] J. Mackenzie, *Empire of Nature*, Chapter 8. The Convention recommended: closed seasons; a ban on hunting for tusks weighing less than five kilograms; export duties on hides and skins; a ban on hunting with nets, pits and poison and the establishment of game reserves. In practice, few countries applied the recommendations and where they were introduced, enforcement was selective.

represented a cultural transferral of ideas from the European metropole to the imperial periphery, which resonated with developments in silviculture and irrigation (chapters 4 and 5) and complemented the scientific exchange networks that had emerged between the Cape and other anglophone settler states (chapters 2, 3, 4 and 5).

On his promotion to the post of Director of Agriculture in 1905, Duncan Hutcheon used his new position to push for greater wildlife protection, using the London resolutions as a model for revised regulations pertaining to the Colony. In 1906 he wrote: 'The matter of game preservation has received careful attention during the year'.[44] The list of species afforded special protection was extended. A three-year prohibition was introduced, for example, against all hunting of gemsbok. Hutcheon expressed concern about the depredations of poachers in Namaqualand and Griqualand West, who were able to indulge in illicit hunting because of the lack of funds to police these areas effectively. He therefore called upon the local public to take up the issue and put pressure on magistrates to ensure people were prosecuted for breaking the law. Reference was made to discussions concerning the founding of a new game reserve in the Kalahari. The financial deficit, however, had delayed the completion of the reconnaissance surveys.

Hutcheon also drew up his own game preservation bill, which resonated with the rhetoric of the metropole. Sportsmen 'wishing to indulge in this luxury' of shooting royal game should pay a higher licence fee, he argued, just as they did in other parts of the world. The governor should have greater powers to restrict the sale of game 'with a view to preventing the indiscriminate destruction which has been indulged in by some persons for the purpose of sale'. His proposals

were racially exclusive: the subtext endorsed hunting for whites only. The use of traps to capture game, a common practice amongst Africans, he believed, should be banned in accordance with 'universal practice' and is 'highly necessary in the interests of successful preservation'.[45] Hutcheon's suggestions were not immediately approved by parliament and debate on the game bill was deferred during the 1906 session due to pressure of other business.[46] Merriman's government eventually introduced new measures in November 1909. The terms of this consolidating statute extended the list of royal game, and introduced a 10 per cent duty on the export of skins and other animal products to try to discourage profiteering. Although not differentiated by name, the law was aimed at curtailed African hunting by banning the customary use of nooses and traps; henceforth the gun was the only weapon legally permitted for the kill.[47]

Hutcheon's comments, together with the subsequent legislation, provide some insight into the attitudes of conservationists and also highlighted some of the practical weaknesses affecting the colonial administration. Hutcheon personified the official expert who was using his position to influence wildlife policy, indicative of the expanding role of agricultural advisors. Although the Progressive Government failed to introduce new game laws in 1906 due to other priorities such as the problematic Irrigation Bill (chapter 4), their compilation of a wildlife census together with their consideration of a Kalahari reserve,

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[44] CPP, G47-1906: Report of the Director of Agriculture, p 20.
[45] CPP, G30-1907: Report of the Director of Agriculture, p 32.
[46] Ibid.
[47] Act 11 1909 To Consolidate and Amend the Game Laws 1886 to 1908. In theory Africans were prohibited from owning guns under the 1878 Peace Preservation Act. However, in practice, according to Patrick Harran, the District Forest Officer at Keiskamma Hoek, the law had effectively been rescinded with the lifting of martial law restrictions and Africans could now access firearms more easily and used them for hunting in the forests. CA, FCE 3/2/21: P. Harran to J. Henkel, 8 January 1906, (chapter 5).

suggested that faunal conservation was a cross-party issue. In 1908 François Malan, the South African Party's Agriculture Minister, met a deputation from the Western Districts Game and Trout Protection Society and formally promised to set up the Kalahari Game Park. It was this government that also introduced the 1909 Consolidating Law, implying that conservation was an important concern of this ministry, dependent for its survival on the continued support of the Afrikaner Bond. Hunting had played an important part in the Afrikaner frontier experience and helped form the basis of a mythical Afrikaner identity.[48] Ensuring the continuance of the hunt, therefore, required a fundamental cultural shift from annihilation to conservation, at least in the minds of the ruling élite.

Hutcheon's concurrent appeal to the public to put pressure on magistrates to prosecute poachers, despite the financial strains on regional resources, indicated the tenuous political control that the government still held over many parts of the country. Although the size of the bureaucracy and police force had increased during the second half of the nineteenth century, it was still insufficient to make the rule of law felt, especially on the geographical peripheries of the Colony. Moreover, no specific game department existed at that time to enforce the official regulations. The reports of the silvatic conservators corroborated this situation, recording numerous legal processes resulting from alleged poaching offences in the crown forests (chapter 5).[49] Protection of wildlife could not, in practice, be decreed by the state; rather conservationists were dependent on the motivation of

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[48] Much of the literature on Afrikaner wildlife ideology is based on the Transvaal. See for example the works of Jane Carruthers together with H. Grobler, 'Dissecting the Kruger Myth with Blunt Instruments: A Rebuttal of Jane Carruther's View,' *JSAS*, vol. 22, 3 (1996) and R. Wagner, 'Zoutspansberg: the Dynamics of a Hunting Frontier 1848-1867', in S. Marks and A. Atmore (eds). *Economy and Society*.

[49] For example, CPP, G26-1905. J. S. Lister, claimed that 129 people were arrested for contravening the forest laws, in particular infringing the game laws which required a licence to hunt in demarcated forests. A Game Department, empowered to enforce the hunting laws was not set up until the 1950s.

forest guards and headmen, the vagaries of public opinion and the enthusiasm of farmers. The existing laws allowed landowners to hunt on their own estates but they were expected to obey the closed season regulations.[50] Consequently, wildlife conservation was, in geographical terms, largely contingent on individual volition and a sense of shared responsibility on the part of the farming community.

Hutcheon's racial prejudices with regard to hunting were replicated by other official commentators, some of whom added a class dimension. Elements of the contemporary literature expressed a marked disdain towards the characteristics of a frontier life, based on hunting for either sustenance or commercial gain. The Civil Commissioner of Springbok in Namaqualand, for instance, complained that the indigent white farmer who indulged in hunting 'does not shoot his animals in the interests of sport, but merely for the purpose of food'.[51] In Victoria West *bijwoners* unsuccessfully petitioned the Divisional Council to abolish closed seasons arguing that game was vital for the subsistence of the poor.[52] For impoverished Afrikaners hunting served as a means of retaining links to a rural past and of staving off proletarianisation.[53] However, by increasing the number of species defined as 'royal game, the 1909 Act was, at least in law, enhancing the exclusivity of this rural activity, due to the additional financial costs now incurred in procuring the second hunting permit. Officialdom reflected a cultural transfer from a more egalitarian frontier ideology, based on survival economics, to the concept of 'the hunt', the exclusive ritualised sport of a more prosperous élite. B.

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[50] G. Williams, 'The Preservation of Game'.
[51] CA, AGR 304, F234: Game Census of 1904.
[52] CA, 4/VCW, 1/1/1/6, minutes of 11 August 1905.
[53] This has been argued by S. Trapido in an unpublished paper produced in 1984 and referred to by W. Beinart and P. Coates, *Environment and History: The Taming of Nature in the USA and South Africa*, (London, 1995), p 27. Similar arguments pertaining to African avoidance of proletarianisation through subsistence hunting have been presented by J. Carruthers, *The Kruger Park*, p 91.

Simmons, the District Forest Officer of Stutterheim, summarised this ethos thus, advocating:

> the exclusion of those most undesirable persons who purchase a licence to shoot for the market only. This Department issues a shooting licence to hunt in Crown Forests solely for the benefit of sportsmen, in the real sense of the term, who shoot for sports sake, and not in view of the profit they may make out of the meat. [54]

It was not just the *bijwoners* who should be denied the right to hunt according to the official rhetoric. Joseph Lister wanted heftier license fees suggesting that 'were the tariff reduced, I fear the rabble from towns like Port Elizabeth, Uitenhage, East London, King Williams Town, Stutterheim etc would overrun the forest reserves. The game would be butchered and there would be little left for genuine sportsmen'.[55] State foresters not only argued that Africans should be prohibited from hunting, but also white urban workers. The 'hunt', as in Victorian Britain, was represented as the sport of the land-owning class, who were legislatively encouraged to follow the 'rules of the chase' as laid down by self-professed 'gentlemen sportsmen' in the metropole. [56] Act 11 of 1909 mirrored the resolutions drawn up in London in 1900 by banning the killing of cow hippopotami and elephants as well as juvenile pachyderms with tusks weighing under 11 pounds. Responsibility was given to Divisional Councils and Municipalities over decisions on whether night hunting, together with the sale of animal products, should be made illegal in areas under their jurisdiction.

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[54] CA, FCE 3/2/21: B. Simmons to J. Henkel, 19 December 1905.
[55] Ibid., J. S. Lister to C. Currey, 17 July 1903.
[56] Details of late Victorian 'hunting codes' can be found in J. MacKenzie, *Empire of Nature*, chapter 11.

Permissive legislation consequently provided an opportunity to demonstrate regional adaptation of 'gentlemanly' codes of sportsmanship. One of the first areas to introduce a ban on the retailing of game was the division of Albany, reflecting cultural links between the anglophone 'Settler City' of Grahamstown and the imperial centre.[57] Many Divisional Councils did endorse the protection of selected species when their numbers became seriously depleted. In Britstown, for instance, a total ban on the shooting of wild ostriches was in operation between 1903 and 1910.[58] Special closed seasons for kudu were particularly commonplace and encouraged inter-conciliar co-operation, for example between the districts of Oudtshoorn, Ladismith and Riversdale, which combined to protect this species in 1904.[59] Thus although in practice the survival of the Colony's wildlife was largely dependent on the vagaries of public opinion, many landowners were prepared to protect rare varieties on their farms, so long as the faunal population was unable to compete with domestic livestock for pasturage. Once numbers had sufficiently recovered the hunting prohibitions were lifted, as was the case with kudu in the district of Oudtshoorn in 1908.[60]

Wildlife conservation was an ideology that appealed to those sectors of both the Afrikaner and anglophone communities who had the property and financial means, together with sufficient access to power, to ensure that they could monopolise access to the chase. This shared rural identity was reflected in the cross-party interest in protecting the Colony's faunal heritage. The 1906 Select Committee on

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[57] CA, 4/AY 1/1/1/4, minutes for 12 January 1909. (Section 14 of Act 11 of 1908 had provided the option to ban game sales, which was reiterated in the consolidating law of 1909).
[58] CA, 4/BTT 1/1/1/2, a five year protection order was requested on 14 October 1903 and subsequently renewed until 12 May 1910.
[59] CA, 4/OHN 1/1/1/6, a three year protection order, involving all three districts, was minuted on 11 November 1904.
[60] Ibid., minutes for 14 February 1908.

Crown Forests, for example, included in its mandate, the need to examine 'how the regulations with regard to the hunting of game in the demarcated forests are carried out'.[61] The testimonies of Bernard Niland, the Progressive Member of the Legislative Assembly for Fort Beaufort, and his South African Party constituency counterpart, Augustus Adendorff, both favoured a total prohibition on hunting in the demarcated forests for both blacks and whites. They also argued that the forests should be designated animal reserves.[62]

Demarcated forests constituted the prototype game park in the Cape and constituted an early attempt by the colonial state to control access to faunal resources. The first declared crown forests were those of Knysna and Addo set up in 1856. In the woodlands lived the few remaining elephants of the Colony, together with buffalo, grysbok, duiker and bushpigs. These animals survived less as a result of any effective conservation policy by the state, and more because of the dense bushveld, which made the area an inaccessible 'hunters hell'.[63] As forest reserves were surveyed and demarcated more systematically from the 1880s onwards, many of the conservators embraced the cause of game as well as timber protection. Hutchins was one of the first to publicise this initiative and characteristically articulated an economic position:

> Game preservation which has been exciting a growing interest throughout the Colony, is a material consideration in the management of the Eastern Forests, since the game, if properly preserved, is certain to yield a handsome return in the future'.[64]

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[61] CPP, A12-1906: Preface to the report of the Select Committee on Forests, p ii.
[62] Ibid., evidence of Niland p 47 and Adendorff p 72.
[63] A. Bannister, R. Gordon and W. Siegfried (eds). *The National Parks of South Africa*, (Cape Town, 1992), p 110.
[64] CPP, G 41-1887: Report of the Conservators, p 34.

The precedent for forest reserves, as with many aspects of silviculture, came from India where game sanctuaries enacting a total ban on hunting had already been established in the Nilgiri Hills in Kerala.[65] Prior to the South African War, Lister had succeeded in persuading Schreiner's government to endorse the 1899 Game Laws Amendment Act in the hope that it would lead to the proclamation of a game reserve in the Eastern Cape. However war broke out and the matter was shelved.[66] Continued lobbying by the forestry department, together with support from farmers led to this statement by the Select Committee on Crown Forests:

> The public forests should be treated as game reserves. No game should be allowed to be shot in them and all possible steps should be taken to prevent poaching which your committee regret to learn is extensively carried on.[67]

Consequently, the Forest Department drew up plans for the creation of a silvatic wildlife sanctuary, effectively enhancing the scope of its bureaucratic mandate. In 1907 a report was submitted to the Government suggesting a 3,000 morgen reserve in the Port St John's District of Pondoland.[68] A change of government, financial difficulties and political preparations for South African Union once again forestalled its inauguration.

Instead of forest reserves, the early twentieth century witnessed the establishment of the Cape's first state-run game parks in the north of the Colony. By 1910 two sanctuaries had been established, one in Namaqualand and the second in the divisions of Gordonia and

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[65] CA, FCW 2/1/4/12: D. E. Hutchins to J. S. Lister, 17 February 1906.
[66] T Sim, *The Forests and Forest Flora* , p 90.
[67] CPP, A12-1906: Final report.
[68] CPP, G39-1907: Report of the Chief Conservator of Forests, p 7.

Kuruman, fringing the Kalahari Desert.[69] These had been created as a result of pressure from the various wildlife protection associations and indicated a certain willingness on the part of politicians to respond to these demands. The Namaqualand reserve, established in 1903, originally covered 545 squares miles and was set up to protect wild ostriches and gemsbok. That at Gordonia, founded five years later, consisted of approximately 10,000 square miles of arid landscape and was home to a wide variety of ungulates including hartebeest and wildebeest.[70] Referring to this latter reserve Pieter Du Toit, the Under-Secretary for Agriculture, argued that Merriman's government had affected this to end the 'ruthless destruction' of game and to try to ensure that policing was systematic and effective. No one could enter the area without a magistrate's permit and all shooting was forbidden.[71] These areas had been handed over to wildlife as part of an economic optimisation programme. Insufficient water to sustain agriculture encouraged the search for alternative land use strategies in these arid regions. Crown lands were only ceded to game when prospectors had proved an absence of underground aquatic supplies.

Despite government support for some form of hunting restrictions, in practice, rural settlement took precedence over the founding of large game colonies. Only when perpetual siccity had been apparently ascertained did the state seek to maximise its fiscal opportunities by creating reserves from which money could be raised by the issuing of entry permits – a prototype for wildlife tourism. The establishment of game parks also represented an agenda of faunal confinement to prescribed areas for the purposes of both control and

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[69] Editorial 'Our Vanishing Fauna', *CTW*, 15 September 1909. The Namaqualand reserve had been set up in 1903 and that of the Kalahari in 1908.
[70] H. Curson and J. Hugo, 'Preservation of Game in South Africa', *South African Journal of Science*, vol. 21 (1924). The Namaqualand reserve was deproclaimed in 1919 to provide farmland, whilst that of Gordonia had been reduced by two-thirds of its original size by 1924.
[71] CPP, G31-1909: Report of the Director of Agriculture, pp 19-20.

utilisation, which to some extent mirrored the containment of many African people in officially designated reserves and locations. Ardent conservationists, such as the secretary and treasurer of the Western Districts Game and Trout Protection Association, Lachlan MacLean, complained in 1909 that the state had failed to allocate sufficient land to wildlife.[72] In reality the economic and sporting instincts of farmers, rather than state managed land initiatives, remained the fulcrum of faunistic conservation.

In juxtaposition to the principle of conserving indigenous species, lay the concept of exotic acclimatisation, especially for the purpose of fly-fishing. Citing the autobiography of the Eastern Cape denizen and angling enthusiast, S.A. Hey, Malcolm Draper has argued that the creation of angling societies was a means of 'forging a new national identity, which transcended the lines of nationalist conflict between Europeans'.[73] This perspective was also demonstrated in the cross-party concern for wildlife protection after the South African War, as well as in the literature produced by writers such as Cronwright-Schreiner who demonstrated that hunting was an activity enjoyed by both anglophone and Afrikaner settlers. In 1884 the first trout ova were imported from Britain in the hope that they could be acclimatised to the Cape environment.[74] Development was a consequence of both state enterprise and farmers' participation. A government trout hatchery was set up at Jonkers Hoek near Stellenbosch before the close of the nineteenth century, specialising in colonising rivers with brown and rainbow trout. The large amount of capital needed to invest

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[72] 'Big Game Deputation' to Malan, *CTW*, 15 September 1909.
[73] M. Draper, 'Going Native? Trout and Settling Identity in a 'Rainbow' Nation', paper presented at 'A View of the Land' Conference, Bulawayo, July 2000. The autobiography referred to was entitled *The Rapture of the River: An Autobiography of a South African Fisherman* (Cape Town, 1957). Draper's approach, to some extent, replicated the arguments of Jane Carruthers in relation to the Kruger National Park (introduction).
[74] S. Playne 'Trout Fishing in South Africa,' from *Cape Colony*, p 147.

in piscatorial laboratories and breeding stations necessitated state initiative at this experimental stage of acclimatisation. By the end of the nineteenth century both varieties of trout had been successfully bred in rivers in the Western Cape and in 1902 the Western Districts Game and Trout Protection Association assumed the responsibility for further introductions. Success in the west encouraged private investment in the east. In 1901 a hatchery was set up at Pirie, near King Williams Town, under the auspices of the Frontier Acclimatisation Society.[75] Ova from these hatcheries were packed in moss and sent out to farmers willing to introduce these species into their dams, rivers and vleis. Thomas Smartt and William Southey, for example, introduced various breeds of trout and carp into their waterways at Britstown and Middelburg respectively.[76]

The motives underlying the importation of exotics were both recreational and utilitarian. Commentators such as Hutchins emphasised economic imperatives. He appeared to be as interested in the introduction of exotic fish as he was alien trees; both provided opportunities for scientific research. Hutchins brought carp to his grounds at Kenilworth as well as the government plantation at Tokai. He believed that this species constituted a much better investment than trout because it could grow over five-foot in length and had a prolific birth rate. Hutchins regarded fish as an alternative form of investment for farmers: 'I hardly ever travel in the country without realising what a resource it would be to farmers and landowners to have carp in their dams and vleis', he wrote.[77] Draper, on the other hand, has argued that the principal incentive, at least in Natal, was unashamedly recreational.[78] Similar perspectives were articulated in the Cape. In 1902, the government biologist, John Gilchrist, reported

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[75] M. Draper, 'Going Native?'
[76] CPP, G56-1901: Report of the Government Biologist, p 9.
[77] D.E. Hutchins, 'More About Carp', *AJCGH*, vol. 29 (August 1906), p 197.

that trout colonisation 'has now reached a stage at which it is considered advisable to open some of the rivers for public fishing .... There seems every reason to believe that some rivers are now well stocked'.[79] Four years later the honorary secretary of the Frontier Acclimatisation Society, H. Fuhr, stated that 'excellent sport' was now to be had on the Keiskamma and Buffalo Rivers.[80]

Angling societies were set up throughout the Cape in the early twentieth century and by 1911 the Colony had 21 associations.[81] Fishing, as with hunting, was an élitist sport; an activity for riparian landowners and members of bona fide associations only. Increasingly there were demands for legislation to stop piscine poaching. According to S. E. Hay the Xhosa took little interest in fish: 'I neither saw nor heard of a Native who fished or would eat fish. The Natives I questioned about their aversion to fish said they would as soon eat a snake. Trout poaching I have found, is confined to Europeans, half-breeds and coloureds'.[82] The angling fraternity demanded measures to ensure that those deemed ineligible for fluvial angling would be deprived of this nutritional and recreational resource. H Fuhr, for instance, advocated state funding for the employment of water bailiffs to patrol rivers.[83] Over-fishing became a political issue. Piscatory regulations, similar to those pertaining to mammals, were implemented to conserve stocks. In February 1906 the Government gazetted a closed season on all the rivers of the Cape where trout and carp had been introduced. Everyone who intended to fish had to obtain a licence from the Resident Magistrate making it financially

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[78] Ibid., p 12.
[79] CPP, G69-1902: Report of the Government Biologist, p 6.
[80] CPP, G51-1906: Report of the Government Biologist, p 8.
[81] S. Playne 'Trout Fishing'.
[82] S. E. Hay, *The Rapture of the River,* p 50, taken from M. Draper, 'Going Native?', p 13. Generally Xhosa and Zulu people had a prohibition against eating fish, although this taboo was not universal especially in coastal areas where some communities collected shell fish.
[83] CPP, G51-1906, p 8.

more difficult for poorer individuals to defray the costs of admission to this activity. All fish under twelve inches in length were supposed to be returned to the rivers and regulations were proposed regarding the type of lines and bait used. Riparian landowners, although they needed no permit to fish, were expected to obey all the other rules representing, at least on paper, a new dimension to state involvement in agrestic management. A maximum fine was set at £20 with the alternative of three months in jail, with or without hard labour.[84] The angling laws provide an additional example of the statutory regulation of the wild and the definition of who had, and who had not, legal access to the Colony's wildlife. Perceptions of an African disinterest in fishing, implied that expulsion in this instance was not so much about depriving blacks of access to rural staples; rather it represented social exclusion, based as much on class as racial constructions. Once again, the state's reliance on the willingness of landowners to protect fish supplies demonstrated the practical difficulty of ensuring the regulations were actually enacted.

(6.3) Vermin

Differentiating between revered game and contemptible vermin was not always easy and it was possible for species to shift status according to the dominant political, economic or cultural priorities at a particular point in time. This was clearly demonstrated in relation to the position of seals. Cape Game Laws protected phocines because their survival had been under threat in the nineteenth century due to culling for their valuable skins. However, by the twentieth century, their numbers had recovered and they began to have a detrimental effect upon the fishing industry of the Western Cape. Seals lived off a diet of small fish and twice a year they waddled onto the beaches of

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[84] *AJCGH*, vol. 28 (February 1906), p 290.

Saldanha Bay, Robbenstein and Dyers Island to shed their coats and breed. Local fishermen regarded them as vermin because they competed with humans for piscine resources. The annual reports of the marine officers, protesting that seals reduced fish supplies, resonated with the complaints made by stock farmers about the impact of jackals on ovine and capral numbers. From Paternoster came the reproach that:

> Fish are getting scarcer here every year. The fisheries are closed in July... Seals continue to do a great harm, and unless means are taken for their extermination, it will be a great drawback to the fishing industry in the future.[85]

By July 1902 pressure from John Gilchrist and the fishing community was sufficient to persuade the government that the 'special protection accorded to seals' should be withdrawn along the Cape coast.[86] This reversal of the conservation laws demonstrated a change of economic priorities. After the South African War, successive governments sought to develop the fishing industry as a viable source of cheap food to support a growing urban population (chapter 2). Seals had therefore outlived their 'right' to protected status, reflecting the vulnerable position of many animals vis à vis the mutable political and ideological classification of the Colony's terrestrial and maritime fauna.

The position of elephants in the cultural construction of the wild also demonstrated the problematic nature of categorising wildlife. Under the 1886 Game Laws elephants were classified as 'royal game', hence, legally, they could not be shot without a special licence. To the woodcutters of Knysna, however, pachyderms represented a variety of vermin that destroyed crops and threatened lives. Illicit killing both

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[85] CPP, G69-1902, p 141.
[86] CPP, G59-1903: Report of the Government Biologist, p 7.

for ivory and security concerned the Midlands Conservator, Colin McNaughton, who lamented that 'the extinction of the elephant here at no very future date is no very impossible supposition, a fact which if only for sentimental reasons is much to be deplored'.[87] The fact that forests afforded habitation and protection for a wide variety of species placed the importance of silviculture in a somewhat ambiguous light in the minds of many Cape farmers. Agriculturists protested that woodlands were breeding grounds for vermin. At the annual meeting of the Farmers' Congress in Grahamstown in February 1904, one delegate explained that 'farmers who lived on the edge of a Government forest suffered most from jackals, as they were preserved and could not be got at'.[88] Conservation methods adopted to sustain one rural product, in this case timber, could be detrimental to other agricultural pursuits and highlighted the problematic nature of deciding what exactly should be protected in the best interests of the settler economy.

Of all the species that were identified as vermin, it was the jackal that occupied centre stage in the contemporary literature. William Beinart and Lance Van Sittert have discussed the threat verminous mammals posed to the income of both individuals and the state. They have demonstrated that the culling of jackals was a consequence of the development of the wool and mohair trade and a reflection of the desire, on the part of farmers, to enhance productivity by protecting their stock numbers. [89] A variety of strategies were introduced to try to destroy this predator. In the 1880s wildlife poisoning societies were founded in the Eastern Cape to encourage eradication through strychnine. This, according to Van Sittert, remained the most popular form of extirpation in the Cape prior to

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[87] CA, FCM (Midlands Conservancy) 2/1/1/7: C. McNaughton to C. Currey, 31 December 1902.
[88] *AJCGH*, vol. 24 (April 1904), p 498.

Union. [90] Bounties, payable by Resident Magistrates on production of a jackal tail, were also offered as an incentive to encourage their destruction. However, neither of these methods were totally successful. The use of venom, unless carefully concealed, was ineffective as the jackal's sensitive olfactory organs ensured avoidance.[91] Before the 1904 Select Committee on the Destruction of Vermin, both anglophone and Afrikaner farmers accused unscrupulous Africans and Jews of defrauding the bounty system, reflecting not only the racist and anti-Semitic ideas entertained by many agriculturists, but also the fact that it was impossible to prove the provenance of these caudal trophies.[92]

In the first decade of the twentieth century the prevalence of jackals, therefore, remained a key concern of the pastoral farming community. Wild carnivora represented the antithesis of royal game in the minds of stock farmers. After the South African War the eradication of jackals was closely linked to the Progressive Government's agenda of making the Colony self-sufficient in foodstuffs, as well as enhancing wool production. The issue was frequently raised in parliament. Charles Lee, the Progressive representative for Uitenhage, declared that 'there was no subject of more importance than this.' Unless the state took action to deal with the jackal 'he would have to give up sheep farming'.[93] Walter Rubidge claimed that the 'worst plague the farmers of this country had to face

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[89] W. Beinart, 'Night of the Jackal'; L. Van Sittert 'Keeping the Enemy at Bay'.
[90] L. Van Sittert 'Keeping the Enemy at Bay', p 342.
[91] W. Beinart, 'Night of the Jackal', pp 193-195.
[92] CPP, A2-1904: Select Committee on the Destruction of Vermin. Evidence of Johannes Schoeman, pp 20-27, Charles Lee, pp 28-39, Izaak van Zyl, pp 79-85 and Hermanus van Zyl, pp 86-94. M. Shain has argued that anti-Semitism in the Cape was on the increase in the early twentieth century and directed against immigrants from Eastern Europe, 'Diamonds, Pogroms and Undesirables: Anti-alienism and Legislation in Cape Colony 1890-1906', *SAHJ*, vol. 12 (November 1980).
[93] *CH*, 25 June 1903, pp 148-149.

was vermin'.[94] In his maiden speech before the House of Assembly in 1904, Rubidge suggested that in 1895 the Colony had lost over £1,000,000 of stock to the jaws of this particular predator.[95] In 1907 he raised the figure to £3,000,000, an increase he attributed to a lack of effective action, particularly on the part of government, in dealing with the problem.[96] According to Rubidge these figures represented an annual decline of 10 per cent in ovine numbers. The presence of jackals, he argued, also undermined the productivity of the pastoral economy as it necessitated the system of kraaling, which accelerated veld deterioration and exacerbated the spread of scab (chapters 1 and 4). Animals became debilitated and their yield of both wool and meat was reduced.[97] The existence of vermin was associated with wasteful land use and unproductive agricultural methods – anathemas to the progressive farmer. Despite the fact that the state was defraying thousands of pounds a year in subsidising poisons and bounties, the Progressive representative for King Williams Town, W. Warren, believed that jackals occupied a wider geographical area than hitherto. With the extension of stock farming in the Eastern Cape, this canine could now be found in the districts of Cathcart and Stutterheim, formerly free of this predator.[98]

Ongoing political concerns about what appeared to be a growing problem led to the convening of the 1904 select committee. The report drawn up by Okkert Oosthuisen was significant because it resolved that the inefficacy of existing methods of state sponsored controls necessitated the proliferation of jackal proof fencing to exclude, rather than to eradicate, vermin from farmland. This type of fencing would also have the added benefit of 'do[ing] away with the ruinous practice

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[94] Conference of the Agricultural Union, *AJCGH*, vol. 26 (June 1905), p 809.
[95] 'House of Assembly: Extermination of Vermin', *CTW*, 23 March 1904.
[96] *CH*, 2 July 1907.
[97] CPP, A2-1904: Evidence of W. Rubidge, pp 2-4.
[98] Ibid., 25 June 1903.

of kraaling'.[99] The initiatives introduced by the Progressive Government to try to make the adoption of jackal proof fencing more popular indicated a new official departure in the war against vermin.

Jackal proof fencing represented an increase in the application of science and technology to agricultural practice. Rubidge was one of the key proponents of 'fencing' the country as well as 'damming' it (chapters 1 and 4). Bounties and poisons, he argued, had failed to have the desired result and the jackal population was on the increase.[100] Rubidge reasoned that the use of strychnine had been widely practised due to an absence of viable alternatives. [101] By 1904, however, wire fencing had become much more sophisticated and various 'do-it-yourself' weaving machines, such as the Cyclone and Kitselman, had reduced the cost of enclosure considerably, making it possible to bar predators from private property.[102] Rubidge earnestly advocated that government subsides be made available for such fencing. Since many farms were not enclosed at all, the only way to encourage this was through state aid. Not only would fencing make it easier to wipe out the jackal, but the creation of enclosed paddocks would also fulfil his conception of how modern farming should be practised. Paddocking would enable the rotation of the veld and thus contribute towards its restoration. Stock would be healthier, have a

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[99] CPP, A2-1910: Report, p v.
[100] Ibid., evidence of W. Rubidge, pp 1-19
[101] Annual Congress of the South African Agricultural Union, *AJCGH,* vol. 27 (July 1905), p 44.
[102] G. Wilson 'Jackal Proof Fencing – Ancient and Modern', *AJCGH,* vol. 25 (December 1904), pp 719-20. Wilson suggested that the cost of an old wire netting fence, at c £106 per mile, was beyond the reach of most Eastern Cape Farmers. Instead, he recommended the Cyclone Woven Wire Fence, retailing from about £62 per mile , inclusive of labour. An article in the *AJCGH,* vol. 27 (October 1905), pp 362-3, described the Kitselman-Duplex Weaving Machine as the cheapest self-assembly fencing but it was vulnerable to cracking. CPP, A2-1904, p 16: Rubidge perhaps over- optimistically estimated the cost at £40 to £50 per mile.

greater commodity value, and the number of scab cases would dwindle.[103]

The whole question of the viability of jackal proof fencing, whether its construction should be defined by law and who should pay for enclosing the country against wild carnivora, was a cause of great contention, and revealed ideological differences between self-proclaimed progressive farmers. Unlike Rubidge, many agriculturists believed that this form of wire netting was neither a necessary nor a realistic proposition. Arthur Parkes, for example, although not totally opposed to such structures in theory, was disenchanted by the overall cost, and questioned whether its actual effectuality justified the expense, since jackals could burrow underneath. As a founding member of the oldest poisoning association in the Colony, the Lootskloof Animal Poisoning Club, he proposed simultaneous venenation and the payment of higher bounties to provide an inducement for more vigorous culling.[104]

The most controversial debate of all was whether legislation should be introduced to make the use of this construction mandatory. At the Agricultural Union Congress in 1905 there was a heated discussion between Walter Rubidge and Arthur Douglass over the proposed parliamentary bill for jackal proof fencing.[105] Since 1883 farmers had been able to obtain government loans for the enclosure of their property.[106] Rubidge wanted payments to be restricted to jackal proof structures and looked to the state to define exactly what

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[103] CPP, A2-1904: Evidence of W. Rubidge, pp 1-19.

[104] Ibid., evidence of A. Parkes, pp 40-58. The Parkes family, owners of Wheatland Farm near Graaff Reinet, were notable progressive farmers and had played an active role in local agricultural politics in the last quarter of the nineteenth century. K. Smith, *From Frontier to Midlands,* chapter 12.

[105] Annual Congress, May 1905, *AJCGH,* vol. 27 (July 1905), p 44.

[106] For details on enclosure see for example, L. Van Sittert, 'Holding the Line: The Rural Enclosure Movement in the Cape Colony c1865-1910', unpublished paper

constituted such a fence in order to ensure minimum standards of construction. Rubidge also hoped a law would make its use obligatory throughout the country. He considered it unfair if a farmer like himself dealt with vermin, whilst his neighbours let their estates become breeding grounds for future predators. His general argument about protecting the interests of agriculturists, who had already actively endorsed modern methods of pest control, from the apparent insouciance of negligent, 'regressive' farmers, resonated with the reasons put forward by some for compulsory stock dipping, weed extirpation and nursery fumigation (chapters 1, 3 and 4). Douglass, however, vehemently opposed compulsion for a variety of reasons. He argued it was too costly and also unjust to order farmers to replace their existing netting with a new specification. Many could not meet this expenditure and feared foreclosure if they defaulted on official loans. As an ostrich farmer Douglass was especially worried that these barbed wire constructions would harm his birds. He believed it was up to the individual and not the legislature to decide on appropriate means of enclosing his property. The Agricultural Union favoured Douglass' approach. The following year the Union 'unanimously' voted against compulsory legislation. Douglass also had the support of the Director of Agriculture, Duncan Hutcheon, who sympathised with arguments about the financial hardship that could result from obligatory enactment.[107]

These debates suggested that many of the most vociferous progressive farmers preferred to promote action at a district rather than at a national, level. The Divisional Councils, whose members were chosen from amongst the rural denizens, tended to represent the interests of the local agricultural élite. The desire to perpetuate this

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1999 and S. Archer, 'Technology and Ecology in the Karoo: A Century of Windmills, Wire and Changing Farming Practice', *JSAS*, vol. 26, 4 (2000).

situation was reflected in the 1905 Fencing Act, introduced by Rubidge with Jameson's support. Although Rubidge did not obtain the legal definitions he had sought, the statute did mean that a constructor of jackal proof fencing could recoup 50 per cent of the cost from a neighbour if the barrier were to their mutual benefit. This law, just like the enabling acts dealing with weeds and the formation of irrigation boards (chapter 4), was permissive in nature and delegated responsibility for defining a suitable fence to the regional authorities.[108] Ideologically therefore, the issue of enclosure demonstrated that rural autonomy at a district level remained a powerful force in Cape politics. As the debate between Rubidge and Douglass revealed, even progressive farmers did not universally welcome obligatory measures introduced from an increasingly centralising government. Rubidge's position on this issue was uniquely statist, as shown by the fact that he failed to obtain the support of either the Agricultural Union or parliament when it came to the extent of the legislation he was proposing.

According to Hutcheon's successor as Director of Agriculture, John Noble Jack, the closing years of the first decade of the twentieth century did witness an increase in the construction of jackal proof fencing. He suggested that this was a consequence of the economic depression, which had made it more difficult for the state to finance bounties.[109] Between 1903 and 1906 the government paid 10 shillings for each jackal tail submitted, and the total vermin expenditure for these three years had amounted to £12,331.[110] Fiscal retrenchment, however, resulted in the suspension of these rewards from 1st January

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[107] Agricultural Union, 9th Annual Congress, 1906, *AJCGH,* vol. 29 (July 1906), p 260.
[108] *CH,* debates on the fencing bill appeared 10, 17, 24 and 31 May 1905.
[109] CPP, G23-1908, p10.
[110] CPP, G30-1907, p 27.

1907.[111] Nonetheless, following demands for their reintroduction from both the Farmers Congress and the Agricultural Union, [112] these payments were restored nine months later at a decreased rate of 3 shillings per tail.[113] For the last quarter of 1907 only £306 was disbursed, which Noble Jack attributed not only to the low rate of the reward, but also to the determination of many Eastern Cape farmers to invest their time and capital in enclosing their properties. [114]

During Jameson's Ministry three fencing associations were established under the Progressive Government's co-operatives scheme (chapter 2): the Graaff Reinet, the Bedford and Tarka and the New Bethesda Co-operative Fencing Syndicates. By August 1907 a total of £6,275 had been advanced to these organisations, at 4.5 per cent interest, over ten years.[115] However, despite demands from farmers' associations in other parts of the Midlands and the Eastern Cape, the exiguous nature of the state coffers meant that no further fencing syndicates were immediately founded under the government loan scheme.[116] So even if a more interventionist political ideology, such as that advocated by Rubidge, had been more widely enunciated, the treasury was unable to offer a substantial number of loans either to individual farmers or syndicates, thus precluding the possibility of making ubiquitous jackal proof fencing a reality. In practice individual capital, rather than official advances, remained the financial mainstay of the fencing movement. In 1911 the census reported a 56 per cent

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[111] Government Notices reported in the *AJCGH,* vol. 30 (January 1907), p 129.
[112] Farmers Congress, *AJCGH,* vol. 30 (May 1907); Agricultural Union, *AJCGH,* vol. 31 (July 1907).
[113] CPP, G23-1908, p 10.
[114] Ibid.
[115] CA, PMO 233, F568/07: E. Kilpin, Clerk of the House of Assembly, to Jameson, 28 August 1907.
[116] CPP, G36-1908: Report of the Superintendent of Agricultural Co-operation, p 12.

increase in wire fencing since 1904. [117] Although these enumerations did not specify the exact nature of these wire constructions, they did reflect the fact that agriculturists were increasingly adopting modern materials for enclosing their land.

(6.4) Conclusion

The question of wildlife, its perpetuation and control, was an important ideological issue in the early twentieth century. The status of many animals was often ambivalent and conflicting. For farmers the priority was eliminating species, which they as individuals held to be deleterious to the agricultural economy. Their interpretations of vermin could also include varieties of royal game such as elephants. For others, wildlife represented part of a cultural landscape and its survival was associated with notions of colonial identity and a romanticised image of a dynamic frontier past. Sportsmen adopted a European rhetoric of protecting game for future generations of recreational sportsmen, whereas scientists looked for opportunities to develop the scope of their academic fields. The cultural classification of the untamed and the concept of conservation emanated from a sense of guilt over the dramatic loss of the country's megafauna, compounded by the increased commercialisation of agriculture. The protection of selected species and the culling of others indicated that the dominant ideology was conservationist rather than preservationist. The distinction between royal game and vermin went hand in hand with the emergence of racial and social hierarchies which determined who should have the exclusive right to recast the zoological environment.

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[117] In 1904 12,532,165 morgen were reported to be enclosed with wire fencing. This had risen to 19,585,225 morgen in 1911. G19-1905, p clxxxvi and UG32-1912, part 9, p 1255.

The first decade of the twentieth century witnessed the consolidation of existing game laws and the creation of the Colony's first wildlife parks. However, in practice, the reality of trying to protect the country's megafauna manifested some of the weaknesses in the bureaucratic structures of the colonial state, whilst the permissive nature of many of the regulations ensured that their enforcement was largely contingent upon the ideological position of the individual landowner.

CONCLUSION

In the introduction the question was posed as to the nature of progressivism in terms of its rhetoric, its function and its implementation in the years immediately following the conclusion of the South African War. Ideologically, progressivism was not a monolithic discourse and individual farmers and politicians expounded different approaches to particular aspects of public policy. In particular questions pertaining to the value and justice of natural resource policy; disputes over compulsory or permissive legislation and the extent to which the state had the right to intervene in husbandry were all contested by commercial and small-scale farmers alike. Nonetheless, what united the progressive elements of the agricultural community was the shared assumption that the Colony needed to modernise and to adopt more efficient methods of production, if it were to become not only self-sufficient in all its foodstuffs, but also able to profit from a stable export market. These political and economic aims were not unique to the Cape. Within the British Empire, as well as in the United States, the function of agricultural progressivism was very much linked to making countries self-supporting, thus enhancing their national wealth, and as a corollary, their international power and influence. In the British context, agricultural progress was associated with ideas of an 'efficient' Empire, politically and economically sustainable over the longer term.

As discussed in the introduction, the historiography of reconstruction has centred on the apparently more dramatic transformations that affected both the economic and the administrative structures of the Transvaal and the Orange River Colony. With its struggling economy, undermined by a prolonged

economic depression that lasted from 1904 until Union, the Cape has tended to evade historical interest. Yet the Cape Colony was not inhabited by a dejected populace who viewed their country as a region in perpetual decline. Nor did they see themselves as a mere satellite, gravitationally, and dependently drawn towards the political and economic core of the Witwatersrand. With its well-established bureaucracy and commercial networks, based on diamond and fibre production, the Colony might have appeared to have been in a state of relative, structural immutability in comparison with its northern neighbours. Yet the people of the Cape did not regard their administrative and economic structures as static entities, incapable of improvement, of rationalisation or of diversification. Just as the former Republics underwent significant changes, under a 'Milnerite' brand of progressivism, so too did the Cape. Economically, the mineralogical future of South Africa lay in the Transvaal, but the determination of Cape farmers and politicians to galvanise the rural sector, above all else, reflected a perception that the cornerstone of the region's agricultural fortunes resided in the Colony. With its fertile soils, its comparatively favourable climate and rainfall, especially in the eastern and littoral zones, the Cape appeared to have had some advantages over the inland states. With its long shoreline and its technical prevenience, in comparison with Natal when it came to trawling, Cape harbours could furnish the fish markets of the hinterland. With the application of science, so the contemporary optimism went, the semi-arid Karoo could be transformed into the verdant garden of southern Africa.

The formal conclusion of hostilities in May 1902 provided an opportunity for reconstruction in the Cape just as it did in the former Afrikaner Republics. Unlike the Transvaal and the Orange River Colony, the nature of reconstruction in the Colony was not dictated

'from above',[1] but was introduced by an elected parliament, dominated for much of this period by Jameson's Progressive ministry, which to a great extent determined the political agenda. Whereas the post bellum capitalisation of agriculture was very rapid in the former Republics, in the Cape such changes had been far more gradual, and in terms of fibre production, had originated in the mid-nineteenth century. Another contrast was the fact that rural transformations in the Transvaal and the Orange River Colony followed the discovery of gold, whilst in the Cape such occurrences had pre-dated the emergence of a mining industry.

The first decade of the twentieth century represented an important episode in the history of the Colony, as it witnessed the development and consolidation of nineteenth century efforts to improve agricultural output. As well as being an era in which farmers and politicians self-consciously put forward a rhetoric of progress, it was also a decade in which new rural initiatives were launched by both agriculturists and the state. During these years the character of colonial science and the course of agricultural development and conservation, as exemplified in the Cape, became more clearly defined.

The rhetoric of progressivism in the post bellum period was multi-ethnic in provenance, but not multi-class. Poorer farmers often lacked a practical rationale for investing in new approaches to scientific agriculture. Hampered by inadequate access to credit, to extensive markets, or even to good pasturage, the costs incurred in adopting even the most rudimentary of modern farming practices, such as small stock dipping or weed clearance, could far exceed the financial benefits that could accrue to them as a result of these efforts. The ideologues of progress, therefore, were those who could benefit most from modernisation: the commercial producers, who tended to

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[1] J. Krikler, *Revolution from Above.*

emanate from the more prosperous and more educated rural élites (chapter 1). In fact, progressivism, as an ideology and a set of enactments could pose a major threat to the livelihoods of smaller producers; development for some brought concurrent underdevelopment and exclusion for others. During the first decade of the twentieth century independent fishermen-cum-farmers, for example, increasingly lost out to trawling companies and Italian anglers, because they could not afford to embrace the technology needed to prospect for fish further out to sea (chapter 2). The regulation and commodification of the forests, meanwhile, threatened, for different reasons, the economic survival of both independent woodcutters in the Knysna and Tsitsikamma Forests, as well as African communities in the Eastern Cape (chapter 5).

Progressivism in the Colony, as in the United States, was closely linked to concepts of conservation and sustainability. On this basis, many Cape Colonists believed that the future of the country lay in the regeneration of the land, rather than in the ephemerality of minerals. At times, conservation was associated with nationalisation, on the basis that only the state could manage resources for the public good and sustain them for future generations. In this respect the first decade of the twentieth century saw an extension in the demarcation of the principal forests under the aegis of the official conservators (chapter 5). In 1901 William Willcocks suggested that the South African governments should take control of the colonies' major waterways also, as he considered this to be the only efficient way of distributing water and furthering large-scale hydraulic projects in the region. This eventuality might have been politically possible in India and Egypt, but not in the self-governing Cape (chapter 4). Meanwhile, a systematic determination of land use, which in the nineteenth century had been manifested in the creation of silvatic reserves to protect timber supplies, was extended during the first decade of the

twentieth century, to include wildlife sanctuaries (chapter 6). The state thus assumed responsibility for defining particular land usage, which reflected specific cultural and economic agendas articulated at a particular point in time.

Conservation also had the dual function of tacitly supported the extension of capitalism, whilst concurrently mitigating the extent of potential exploitation. In the Knysna and Tsitsikamma Forests, the more rigorous implementation of supervised and restricted felling after the South African War, enabled those who had access to sufficient capital to purchase the open sections outright and thereby dominate the timber industry. Companies such as Thesens and the Mangold Bros. thus prospered. Nevertheless, the existence of the conservators ensured that although these businesses might control available output, they could not appropriate the silvatic resources in their entirety. Conservation functioned as a brake on the extent of commercial extraction; yet contemporaneously, the economic conditions facilitated company, rather than individual, accumulation (chapter 5).

An ideological belief in the efficient use of telluric resources and the transformation of rural environments as a basis for enhancing yields underpinned much of the progressive refrain. This in turn necessitated a scientific approach to resource management. Technology constituted a tool that was adopted by farmers and the state in a bid to ameliorate productivity over both the immediate and the longer term. The entomologist, Charles Lounsbury, assumed that the potential for future national wealth was dependent on the extent to which the Cape's denizens were willing to promote scientific husbandry, as part of their armoury in their struggle against global competition (chapter 3). Lounsbury's beliefs, together with his work, demonstrated the confidence that scientific practitioners invested in

the notion that they could modify nature through technological application. Increasingly artificial methods of reshaping the environment took precedence over the natural. By 1910 insecticides, as opposed to continued attempts to introduce biological predators, had emerged as the most popular way of dealing with fruit pests. Laboratories, with specialised facilities, began to supplement the field as the locale for scientific research, be it into the life cycles of ticks or a variety of pisciforms (chapters 2 and 3). Plantations, rather than indigenous forests, provided the setting for experiments into the acclimatisation of exotics, which were cultivated because conservators, such as Ernest Hutchins, considered them to be more economically productive. Alien trees were thus associated with the construction of more efficient landscapes (chapter 5).

Economic reasons for responding to a technological and a conservationist rationale were complemented by cultural dimensions. Science was a reflection of modernity, and events such as the visit of the British Society for the Advancement of Science to South Africa in 1905 provided an opportunity to demonstrate that Cape based scientists, especially those working within the Agriculture Department, could confer on equal intellectual terms with metropolitan experts.[2] Progressivism was very much part of a colonial self-advertisement intended to demonstrate that the Colony was a dynamic, developing state, rather than a static, or politically and economically declining region of South Africa. Scientific and agricultural interchanges based on shared economic and ecological conditions, also encouraged a cultural rapprochement between the South African colonies, as well as between the periphery and the metropole. The first of the post war inter-colonial veterinary conferences convened in 1903 to discuss methods of dealing with the cross border propagation of diseases,

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[2] S. Dubow, *Science and Society*.

together with the compilation of a stud register, was followed by co-operative attempts to destroy locusts, and the creation of an Inter-Colonial Agricultural Union in 1905. This social integration, based on the exchange of scientific ideas, contributed to the construction of a white 'South Africanist' identity, just as much as the artistic and literary activities that characterised the intellectual side of the 'closer union' movement (chapter 2).[3]

Ideologically, a cultural appreciation of aesthetics and the value of rural recreation, also formed part of the Colony's own environmentalist ethic in relation to the conservation of wildlife. Indigenous megafauna had once formed an integral part of the natural scenery of the entire region. The piecemeal attempts introduced in the post bellum Cape to preserve and revitalise the existence of selected zoological species, mirrored a more general concern, on the part of South African governments, to re-create a sense of wilderness and identity based on a shared nostalgia for a departed landscape.[4] Some farmers, especially in the Midlands and the Eastern Cape were increasingly prepared to devote parts of their estates to the protection of ungulates, either in the economic interests of faunal regeneration, or for the fulfilment of their own regulated hunts. The demarcation between the 'domestic' and the 'untamed' was thus becoming less rigid, as the formation of wildlife camps emerged as a distinctive feature on some farms (chapter 6).

As well as an indigenous concern for faunal protection, the introduction of legislative controls pertaining to hunting demonstrated the transferral of metropolitan and imperial agendas to the Cape. This in turn was indicative of the scientific and cultural networks that existed not only within the Empire, but also between this Colony and

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[3] S. Dubow, 'Colonial Nationalism'; P. Merrington, 'Pageantry and Primitivism'.
[4] J. Carruthers, 'Game Protection in the Transvaal'; Kruger National Park.

the United States. Developments in forestry and hydraulic engineering, in terms of both personnel and scientific and technical experiences, owed much to Indian precedents. Lounsbury and his colleague, Charles Mally, together with the predominantly American entomologists who served in the other South African bureaucracies, promoted the inception of intellectual ties that spanned the Atlantic. Scientific practitioners in the United States studied, with interest, the investigations carried out in South Africa with regard to insects. The American *Journal of Economic Entomology* provided an important outlet for the publication of commentaries on South Africa's scientific endeavours, at a time when the Cape and its neighbours lacked professional periodicals in which to promote their endeavours before a global audience. The United States also provided a model for the creation of experiment stations to further agricultural science, and with Australia, became significant collaborators in the attempts made by Cape entomologists, foresters and farmers, to acclimatise new varieties of flora and fauna to the Colony's own environment. The creation and consolidation of scientific networks, based on intellectual exchange and the intercontinental transferral of a diversity of biota, formed part of a common anglophone settler identity, rooted in a shared belief in an idealised modernity founded on western precepts of civilisation and development (chapters 2, 3, 4, 5 and 6).

The cultural rhetoric of modernity and progress as evinced by farmers was also multi-faceted in its dimensions. Issues of conservation and sustainability were as a much a concern to agriculturists as they were to government scientists and officials. William Southey, for instance, flagrantly attacked those who wasted valuable resources, such as water, which, in his view, could easily be trapped and used to reclaim exhausted environments (chapter 4). Other such as Walter Rubidge argued in favour of breeding a smaller number of pedigree livestock, supported by rotational grazing in wired

camps. These measures, together with the compulsory usage of jackal proof fencing, were intended to improve stock yields, as well as preserve the fragile veld (chapters 4 and 6). Progressive farmers also suggested that valuable topsoils and grasses could be protected from the effects of commercially motivated overstocking, by switching nutritional dependence from natural to cultivated grazing. An ability to grow sufficient fodder would obviate the tradition of trekking, which was an anathema to many modernising ideologues, since it represented both a dissipative and destructive use of the veld. Sedentary agriculture was associated with progress, and the optimal use of the land, by putting all the available tellurian resources under the hoof or the plough. To this end, some farmers began to experiment with new grasses, often exotics such as *Paspalum dilatatum*, as well as the more established varieties, such as lucerne. Rubidge's Lucerne Growers Association demonstrated both the growing acceptance and the growing importance of this approach, and bound producers together in an effort to protect their economic interests. This diversification into new forms of cropping was not limited to the pastoral sector. Monoculture became the subject of an agrarian critique on unsustainable farming methods, and many progressive farmers engaged in 'co-operative experiments' intended to restore pedological nutrients and encourage enhanced yields, by scientifically analysing the adaptability of a wider variety of crops to a given locale (chapter 2).

Notions of sustainability, therefore, went hand in hand with concepts of development, in particular in the realms of irrigation. By accessing and controlling water, be it from the perennial Breede River or an intermittent freshet in the eastern Karoo, more land could be brought under cultivation or pasturage. Farmers in the Western Cape, such as Dirk de Vos Rabie and Hermanus Van Zyl regarded the Breede, and its tributaries, as fluvial arteries that could provide life for

a potentially lucrative fruit industry, thereby economically resurrecting this depressed region, worn down by the legacy of phylloxera. The development of boreholes in the Karoo, meanwhile, increased the stock carrying capacity of the land, whilst the large dam projects engaged in by the Smartt Syndicate at Britstown enabled the introduction of mixed farming to a seemingly arid wasteland (chapter 4).

Hydraulic engineering was one of the major branches of science that progressive farmers were prepared to endorse as a mechanism for enhancing productivity. In the words of the Agricultural Assistant, Eric Nobbs, science was ceasing to constitute the 'butt of bucolic wit'.[5] This in turn encouraged demands for specialist agricultural education. Whilst the exiguous nature of the state coffers, meant that settler farmers had to be content with the limited instructional facilities available at Elsenburg, wealthier Africans in the Transkei had the opportunity to study the rudiments of pastoral farming and land reclamation at the colleges of Tsolo and Teko. Both were established during the first decade of the twentieth century, and demonstrated the importance that African political and economic élites attached to education, together with their determination to further sustainable commercial production on behalf of black agriculturists (chapter 2).

Many progressive farmers, regardless of ethnicity, were also willing to accept, and pay to support, a wider range of official expertise. As well as entomologists, fruit growers sought the attention of mycologists whilst pastoral producers wanted an augmentation to the size of the Veterinary Department. Financial problems, however, forestalled the recruitment of the requested scientific personnel. Nonetheless, whilst accepting the principle that official science could be valuable, its fluorescence was not bereft of complications and contradictions. Science, as played out on the farm, remained a

contested issue. William Southey believed his approach to irrigation was equally relevant to that of Webster Gordon, precisely because his initiatives had been based on his personal observations of the topography and hyetology of the Middelburg District, which he held to be more significant than an acquaintance with the finer points of hydraulic engineering. This importance attributable to settler knowledge was particularly notable in respect of irrigation issues, as the numerous articles on the credibility of dowsing illustrated (chapter 4). Numerous farmers also remained sceptical about the merits of veterinary medicine and unsure of either the veracity of germ theories or the safety of inoculations (chapter 2). Despite the increase in personnel attached to the Agriculture Department, especially for the arable sector, there was still an overall paucity of official expertise, which, to a great extent, both endorsed and perpetuated the significance of amateur science. Nobbs was dependent on farmers for his 'co-operative experiments' into both crops and grasses, whilst Lounsbury and his veterinary colleagues worked with, and learnt from, individuals who were prepared to experiment with a variety of home-made insecticides, acaricides and vaccines (chapters 2 and 3).

As a corollary of the gradual evolution of a scientific bureaucracy, progressive farmers were prepared to accept, to varying degrees, an increase in the powers of the state. Agricultural development was, after all, a national issue thus the government could be called upon to play a regulatory role on behalf of the public interest. The highly charged debates concerning the question as to whether certain legislation should be mandatory or voluntary in implementation was not necessarily about whether the state had the right to intervene in agricultural practice; rather the altercations revolved around which organisation should be able to define policy.

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[5] CPP, G12-1903, p 9.

Progressives were divided as to whether to accept the empowerment of central, as opposed to district, authorities. This was clearly demonstrated in the positions adopted by Walter Rubidge and Hercules van Heerden over the Scab Laws. The former passionately insisted that the Chief Inspector of Sheep should appoint all inspectors, whilst the latter fervently believed in local appointees (chapter 1). Rubidge's highly statist approach, also brought him into verbal conflict with Arthur Douglass and the Agricultural Union over whether the legislature or a rural community should be entitled to determine what exactly constituted a jackal proof fence (chapter 6).

Overall, it was the supporters of local control who continued to triumph in this ideological struggle over rural regulation during the first decade of the twentieth century. The supervision of the Scab Acts remained in the hands of regionally co-opted inspectors (chapter 1). Under the auspices of the Entomology Department, this elective system was extended to cover locust clearance, whilst riparian projects and aquatic allocation were decided by regional river and irrigation boards (chapters 3 and 4). Divisional Councils, meanwhile, issued by-laws dealing with noxious weeds and determined the nature of local proclamations concerning game protection (chapters 4 and 6). Parliament might pass statutes, be it for the compulsory dipping of small stock, the fumigation of nurseries, the destruction of lungsick animals, the eradication of burrweed, or the enforcement of the Location Acts, but the reality of enactment lay with the locality. The inability to cleanse flocks of scab and fields of burrweed highlighted the continuing underlying weakness of the colonial state in the post bellum Cape. Neither the administrative nor the policing structures were sufficient to enforce these regulations effectively without the wholehearted support of individual communities. The controversial nature of many of these legislative controls, especially the Scab Acts, together with the cost of extirpating economically injurious biota,

weakened the position of the 'compulsionist' lobby. Critics of this political impotence, such as Charles Lounsbury and the Chief Inspector of Sheep, Allen Davison, attributed this position to the unwillingness of both Jameson's and Merriman's governments to confront 'backveld' opposition. Only in the Transkei where the African voice was politically more muted and the state tacitly supported by commercial farmers, relatively quiescent headmen and a collaborationist Bunga, could legislation, such as that pertaining to small stock dipping, be more stringently applied (chapters 1 and 3).

Although settler farmers often remained suspicious of collaborative efforts aimed at improving rural production when these emanated from central government, the post-war years did witness an ideological attempt to promote a more collective approach to agricultural development amongst farmers themselves. If the Colony were to become self-sufficient in agricultural production, then its practitioners had to work together, not only to deal with pests, but also to improve the quality of goods and develop competitive marketing strategies. To this end, progressive ideologues gave vent to a rhetoric of national shame, tempered by the prospects of national revival. The 'evils of sluiting', the iniquitous alimentary import bill, together with the opprobrious, yet characteristic dung-ridden fleeces, were subjects of declamatory scorn and constituted a condemnation of apparent settler indifference to laudatory rural practices. Agricultural organisations, such as the Farmers Congress, the Agricultural Union, the Afrikaner Bond, as well as local societies, such as that of the Zwart Ruggens Farmers Association, all advocated (white) ethnic collaboration in an effort to restore the veld, improve agricultural yields and develop the economic potential of the country. Effectively, this amounted to a move away from the fierce spirit of individualism, which notionally characterised the frontier dynamics of colonial expansion, and was associated by outsiders, such as Patrick Hannon,

the Superintendent of Agricultural Co-operation, with obstructing advances in agricultural productivity (chapters 1 and 2).

A collective approach, at the most fundamental level, was revealed through a willingness to share ideas. The *Agricultural Journal*, together with newspapers such as the *Cape Times*, the *South African News* and *Ons Land*, published articles submitted by farmers, detailing their successes in particular rural ventures. Some of the more prosperous stockbreeders sought to improve the quality of their goods and develop their retail outlets by joining together to form trading organisations such as the National Wool, Mohair and Ostrich Feather Association. The compilation of the *South African Stud Book* reflected a collaborative approach towards systematically recording the location of pedigree stock, in order to facilitate the proliferation of high-yield animals, and thus increase both meat and fibre production, whilst theoretically, preserving the veld from overstocking (chapters 2 and 4). In the Western Cape, tentative efforts were made to form syndicates and irrigation boards to exploit the optimal potential of the Breede River Valley to the mutual economic benefit of the district's riparian landowners (chapter 4).

The desire of farmers to increase agricultural production in order to satisfy their own economic interests was politicised through an ideological commitment, on the part of both parties, to further rural development (chapter 1). The four-year ministry of Leander Starr Jameson, built upon the administrative and legislative procedures that had been laid down during the final decades of the nineteenth century. The policies of his government, and that of his successor, John Xavier Merriman, were not particularly radical in terms of either originality or nature, but rather focused on making existing structures operate more effectively and on introducing new measures which had proved to be successful abroad.

The Progressives were keen to improve the functioning of the Agriculture Department in order to co-ordinate the execution of rural policy in a more competent manner. To this end, three commissions were established, which resulted in the centralisation of the Forest Department and the creation of the post of Director of Agriculture to oversee the whole structure (chapters 2 and 5). The appointment of a permanent Director of Irrigation, supported by a network of circle engineers, effectively formed a hydraulic sub-branch of the Department of Public Works, and demonstrated the importance this ministry attached to increasing the amount of land under cultivation (chapter 4). The official collation of statistics, which had already been accepted as a means of estimating current and planning future agricultural initiatives, was extended to apply to wildlife. The first state game census was compiled in 1907. This enumeration was used by Merriman's government, as a basis for the introduction of stricter hunting regulations, apparent in the Consolidating Game Act of 1909 (chapter 6).

Rationalising existing legislation was a feature of this decade. In 1906 the hydraulic enthusiast, Thomas Smartt, promulgated a new Irrigation Act, to elucidate and consolidate the various pieces of legislation that had been on the statute books since 1877. The aim of the Government was to entice more farmers to invest in irrigation schemes, by providing easier access to state loans and by clarifying the procedures involved in setting up riparian boards and peripatetic water courts. Replacing piecemeal measures, with over-arching and all encompassing legislation was symbolic of a drive towards greater administrative efficiency as a foundation upon which agricultural development could flourish (chapter 4).

Jameson's government also introduced new statutes, which represented an important increase in the supervisory powers of both

the state and its officials. Veterinary measures that had been introduced in the late nineteenth century to deal with infectious livestock and to oversee the importation of animals were replicated in new laws pertaining to plants. Unlike previous governments, this Ministry was prepared to endorse Lounsbury's recommendations for strict controls on the introduction of foreign flora as well as the destruction and isolation of nurseries, contaminated by insectile pests and fungoid diseases. This showed the particular significance that this government attached to the fruit industry (chapters 2 and 3). Other regulations involved the introduction of quality controls. Seeds, fertilisers, and alcoholic beverages all became subject to inspection, in a bid to improve yields, the potability and hence the marketability of wine and brandies and to protect the interests of both farmers and consumers (chapter 2).

Ameliorating the arable sector was also a special priority of the Progressive Ministry, and indicated a move away from concentrating research resources predominantly on the pastoral sector. In this respect, agricultural science was furthered through the recruitment of specifically trained personnel, such as Eric Nobbs and the viticultural expert, Raymond Dubois, as well as through the creation of two experimental stations at Knysna and Robertson. The choice of these two districts indicated a dual agenda on the part of the government. The institution at Knysna was specifically established to try to regenerate one of the most depressed agricultural regions of the country. That at Robertson, on the other hand, focused on enhancing the diversity of crops and grasses in a more prosperous part of the Colony, where some farmers were already promoting economic growth through irrigation schemes and the cultivation of fruit trees. Other state initiatives included the appointment of a Trade Commissioner, Charles Du Chiappini, to discover new commercial openings for fruit producers thereby endorsing the efforts made by some Western Cape

farmers to diversify from vine cultivation to the establishment of orchards. Based on the successful development of co-operatives in Western Europe and elsewhere, money was concurrently voted for the founding of similar ventures in the Cape. The Progressive Government tried to encourage wine farmers, amongst others, to collectively process their raw ingredients in an effort to manufacture a superior product. By doing so Jameson's ministry increased the parameters for future state involvement in commercial farming (chapter 2).

In theory, the Progressive Government sought to incorporate as many agricultural practitioners as possible in its productivity drive. Co-operatives were intended to appeal to smaller producers; experiments at Knysna were aimed at helping unemployed woodcutters to develop alternative survival strategies. The introduction of a law enabling the foundation of an agricultural credit bank was thwarted in its implementation by the 1907 dissolution of parliament, the unyielding economic depression and Merriman's more parsimonious approach to public policy. Nevertheless, this initiative demonstrated a willingness to make financial resources more readily available to a wider number of farmers. The question of how to deal with 'poor whites' in the context of Victorian concepts of Social Darwinism, and the association of indigence with racial degradation, was a complex one, and occupied the minds of both political parties. Nonetheless, despite these concerns, in practice, politicians remained committed to intensifying capitalist modes of production, be it in the agricultural, the silvatic or the piscine sectors, because they considered this to be the only way of achieving their economic objectives. The introduction of legislation to encourage the propagation of compulsory education for white children was a de facto admission of this eventuality, and the realisation that alternative opportunities had to be created for those who could no longer subsist on the land (introduction, chapters 1, 2, 4 and 5).

Despite the fact that the state concentrated both its attention and its resources on facilitating the growth of a profitable settler economy, Africans residing in the Eastern Cape and the Transkei were not totally excluded from governmental provisions. The region was provided with the services of government scientists, including veterinarians, entomologists and hydraulic engineers. Although there was considerable cultural opposition, especially in the Transkei, to attempts by veterinary surgeons to interfere with stock rearing through the destruction of infectious animals, opportunities were nevertheless available for African farmers to consult these specialists, should they wish to. Research into a variety of tick borne diseases and the consequent experiments on forms of prophylaxis were of value to both African and settler farmers, and became increasingly so with the spread of East Coast fever into the Transkei in 1911 (chapter 1). State owned boring drills were made available to African communities who wanted to prospect for subterranean water in their locations, in an effort to provide refreshment for their livestock and improve the ecological and economic viability of the reserves (chapter 4). The agricultural colleges at Tsolo and Teko were partially funded by central government in order to encourage a more scientific approach to animal husbandry and the substitution of multitudinous beasts for a smaller number of selected prize animals (chapter 2). The colonial state was therefore already concerned about the sustainability of pastoral farming in the African locations as well as on the white owned farms. The development of wattle plantations specifically to meet the African demands for hut and kraal wood reflected a positive side to state forestry and demonstrated that it was not entirely settler-centric in its orientation (chapter 5).

Silviculture, as enacted in the Eastern Cape and the Transkei, however, illustrated the complexity of colonial policy. On the one hand the Forest Department cultivated timber to supply local needs;

on the other hand it was dogmatic and dictatorial in its approach to Africans and their customary utilisation of silvatic resources. Yet this attitude was not restricted to the Eastern Cape. White and coloured pastoralists and woodcutters were similarly being denied unrestricted access to the forests and traditional grazing lands in the Cedarberg and the Knysna/Tsitsikamma Forests. What was particularly hard for Africans, however, was the extent to which their land was forcibly and continuously being appropriated, under the guise of laws and regulations that had been drawn up without their express consent. Silvatic staples that had traditionally been viewed as the free gift of nature, were transformed into material commodities, access to which was circumscribed by financial costs and unfamiliar constraints defined by the colonial state (chapter 5).

As a result of the efforts of both the farming community and the post bellum governments, the Union census of 1911 indicated that despite the economic depression and the environmental, financial and cultural constraints on development (chapter 1), the first decade of the twentieth century had been one of growing productivity in almost all aspects of the rural economy.[6] Stock numbers had recovered and surpassed pre-rinderpest levels. Cereal and fruit production had increased dramatically and more land had been placed under irrigation. Trawling had emerged as a viable industry, now producing for both an internal and external market. A variety of plantations had been established, and profitable timber yields were awaited. The recoupment of selective species of game had become increasingly possible due to a growing concern for their survival, and the proliferation of measures designed to protect them. Only the wine industry continued to suffer the effects of a restricted market and poor production methods. Overall, the census figures illustrated the

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[6] UG32-1912, part nine dealt with agriculture.

underlying vitality of the agricultural sector, and the determination of its practitioners to improve output. The period of reconstruction in the Cape was therefore a relatively energetic episode in the rural history of the Colony.

Finally, this activity was reflected in events which happened beyond the confines of the Cape's own borders. Despite the fact that the first decade of the twentieth century concluded with the political ascendancy of the Transvaal, the development of this province, just like that of the Orange River Colony and Natal, owed much to its south western neighbour. Not only did the Cape export a proven model for a viable Agriculture Department; it also transferred its scientific expertise. Foresters, for instance, who had gained their original experience of South Africa's silvatic environment in the Cape, headed all four Forest Departments in the years prior to Union. The Government of Natal depended on the explorations and discoveries of the Marine Biologist, John Gilchrist, as the precursor for the establishment of a trawling industry there. Legislative regulations pertaining to veterinary and entomological controls, together with the monitored use of sylvan resources, were concurrently transposed throughout the region. Meanwhile, the driving force, behind the creation of joint ventures, such as the *South African Stud Book* and the Inter-colonial Agricultural Union, emanated from the Cape, and were the inspiration of influential and persuasive progressive farmers such as Charles George Lee. Amongst the most important bequests of this Colony to the Union, were its agricultural and scientific initiatives as well as its proven models for development, which demonstrated a confidence founded on the self-perception that the Cape Colony was South Africa's first ideologically progressive state.

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